

Celebrating 40 Years Of
FLORIDA WILDLIFE[®]

Volume 41, Number 3

May-June 1987



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FLORIDA® WILDLIFE

Dear Friends of FLORIDA WILDLIFE,

During the 40 years the Commission has published FLORIDA WILDLIFE magazine, profound changes have occurred in our state. In 1947, when the first issue was printed, about 2.6 million people lived here; now we are approaching 12 million. The resulting impacts on wildlife from a human population increase of more than four and one-half times in only four decades have been dramatic.

When the first issue of FLORIDA WILDLIFE was circulated in June 1947, the Florida panther was so common throughout the state that it was unprotected. Since then, much of its preferred habitat has been put to other uses, and now, it is more endangered than China's great panda. Today, the Florida panther exists only in very small numbers in relatively isolated areas of Florida. Another species, the ivory-billed woodpecker, once lived in many of our hardwood bottomlands. It was still found in Florida as recently as 1969, but it has since become extinct here and elsewhere in the mainland of North America. In more recent years, other wildlife species have continued to be negatively impacted by our human population. To note one example, there have been significant declines in the numbers of many of our favorite songbirds.

However, the past 40 years have also seen successful restoration of the white-tailed deer, wild turkey, brown pelican, American alligator and the colorful wood duck in Florida. Because of the Commission's decades of efforts to scientifically manage Florida's living resources, we now have sustainable populations of these species living on public and private lands throughout the state.

Similar strides have been made in freshwater fisheries management. An example which is very important to the public today is our long-term program for providing public access to Florida's best freshwater fishing areas. Another success has been the Commission's program to rear and release millions of hybrid sunshine bass into a multitude of public Florida lakes and streams.

The Commission's fish and wildlife management programs have always benefitted nongame species, as well as game species, but in 1984, the Florida Legislature funded the Nongame Wildlife Program to further specific conservation efforts for nongame wildlife. Today, this new program is making it more possible to conserve and manage a much broader range of wildlife and their habitats. The rich quality of life we enjoy in Florida is closely tied to the well-being of our great variety of native animal and plant communities, and today's more holistic approach to wildlife will help ensure their well-being.

Since 1947, FLORIDA WILDLIFE has encouraged conservation by publishing the stories of fish and wildlife extinction, restoration, natural history, management and dynamic interrelationships with man. But most importantly, it has been you, our readers, who have contributed so much to conservation through your efforts to learn about fish and wildlife, your financial support through subscriptions and licenses, and an ongoing interest in supporting the Commission's efforts to manage Florida's freshwater fish and wildlife for the benefit of everyone.

To our readers of former years and today, we extend our gratitude and an invitation to continue with us into the coming years.

Sincerely,

Colonel Robert M. Brantly
Executive Director

FLORIDA WILDLIFE®

Volume 41, Number 3

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THE COVERS

The graceful pair of red-tailed hawks on our covers is from a painting by John Roberge.

FLORIDA WILDLIFE (ISSN 0015-4369) is published bimonthly by the Florida Game and Fresh Water Fish Commission, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Second-class postage paid at Tallahassee, Florida. Post Office Publication Number 202440. MATERIALS IN FLORIDA WILDLIFE include copyrighted materials which are property of individual contributors. Written permission to use the publisher's materials will be granted routinely by the editor for noncommercial, public informational purposes. MANUSCRIPTS AND PHOTOGRAPHS are received only with the understanding that the publisher assumes no responsibility for any loss or damages. Contributors should request "HOW TO SUBMIT" before sending materials. SUBSCRIPTION PRICES (sales tax included) are: \$7 for one year (six issues); \$14 for two years (12 issues) and \$20 for three years (18 issues).



Some Dogs Are Wonderful...

By Les Alexander

The best thing that can happen to a man is to own a dog; restricted, of course, to a hunting breed. It also might be the worst that can happen, akin to plague and pestilence. A good dog is a joy, but the wrong mutt can be disaster incarnate.

Years ago I met a salesman who had moved to Lakeland from Ohio, Burley, who lived to hunt quail. The first thing he wanted to do for Florida was to buy a bird dog. I knew a veterinarian in Brooksville who bred pointers, so I shepherded my new friend there one weekend.

Doc had some dandies, which he put through their paces out back of his place, and it was tough choosing. Throughout the trials, I noticed that Burley kept his eyes tight to the ground and that he seemed intent on moving every weed within reach with his foot. What he was thinking did not register with me at the time.

After picking out a blocky ranger called Biff, we started back to Lakeland. Burley brought up the subject cautiously as Biff slobbered over his shoulder from the back seat. He said he was "just wondering," seeing how he had heard some tales, and he was "worried about such an expensive dog."

He asked, "How bad is the snake problem in Florida?"

After due consideration, I told him, "I haven't seen a snake in years." That was the truth.

Opening day, nothing would do but for me to go quail hunting with Burley and his new dog. In the cool morning, Biff bounced out of the truck-box, then inside of a hundred yards, he came down on as solid a point as you've ever seen.

Proud as Hector, Burley went in to find the birds that Biff was pointing. Three steps beyond the dog, Burley almost stepped right into a foot-high coil of mad rattlesnake that was too cold to buzz its rattle.

By the time I got Burley back to the truck, he was a quivering mess. He wouldn't get out of the cab the rest of the day, even though Biff found covey after covey for me. The next day, after discussion on our low chance of running up on another rattler, Burley was ready to try again.

The first few minutes of the second hunt, Biff was poetry. He ranged exactly as he quartered the field, every inch a champ. When he locked up solid with only a quiver of tail showing his tension, Burley stepped forward, talking softly, a few steps, then a few more. A rattler sounded off barely two feet away from a chickweed clump, then a second one sounded off to the left.

Like I said, a dog can be a disaster. Biff could find the only rattlesnake in 50 miles and point him ▷



from 10 feet. Poor Burley. The last I heard, from someone else since Burley is not talking to me, was that he had sold his guns, quit hunting and taken up shuffleboard. He still kept the dog to spot snakes around his condo, I think.

Then there was a dog my friend Lyle called Roamer. It was a horrendous animal, mixed up between bluetick, black and tan hound, Saint Bernard and airedale. On a bear hunt in Osceola National Forest one year, Roamer whipped every dog in camp that would fight and cowered the rest with his arrogant size. But on those scouting days before legal hunting time, he was accepted by the hunters as most likely to succeed.

Osceola bear hunters are not known for shy and retiring ways, and Lyle rubbed verbal salt in his peers' pride almost as badly as Roamer treated their dogs. A couple of times I figured Lyle was going to get his corn shucked, but Roamer was there by his leg, wrinkling a lip whenever anyone came too close. The dog would give a slow warning growl that would send Adam up a tree, leaving Eve down below.

All legendary, hard-to-corner black bears have names like Old Slew Foot, or Three Toes Tiger or even Old Terrible, but there was one in Osceola we just called Bad News. He was close to 400 pounds, judging from rare sightings. Every year it was the same story: he would be jumped a few times early in the season, but always lead the dogs through the roughest country still existing. When he tired of all the "fun," he'd disappear. We figured he just headed north when the notion struck, all the way to Okefenokee Swamp.

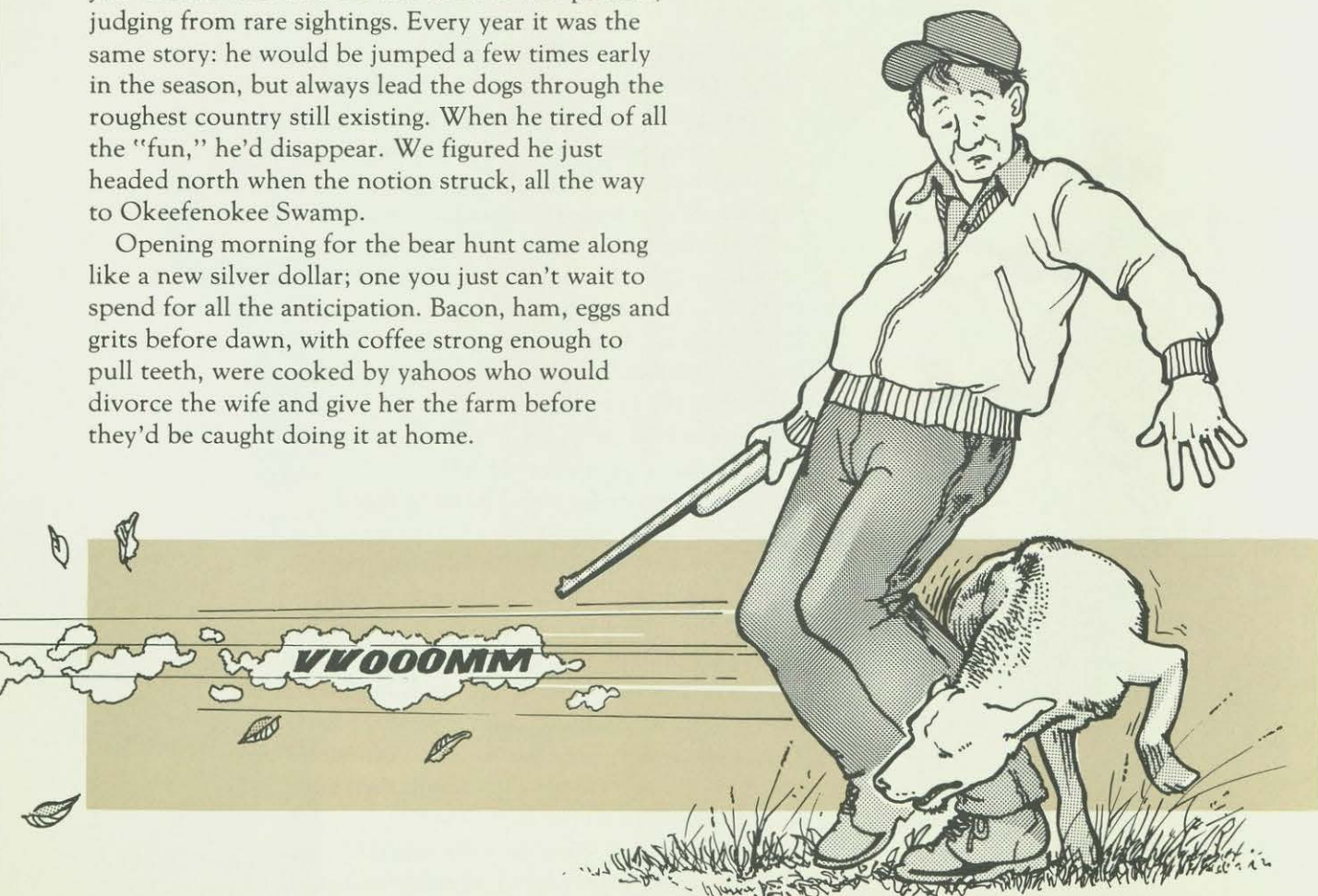
Opening morning for the bear hunt came along like a new silver dollar; one you just can't wait to spend for all the anticipation. Bacon, ham, eggs and grits before dawn, with coffee strong enough to pull teeth, were cooked by yahoos who would divorce the wife and give her the farm before they'd be caught doing it at home.

The dogs were bellowing in a frenzy to be running free, hunters were yelling, and we could hear motors revving, tailgates banging and ice chests rattling. The smell of wood smoke, bacon fat, wet dogs, worn boots, gun oil, watered earth and fresh air was around us. It was the annual gathering of the fraternity, an endangered species all, still answering a siren call from the mists of man's beginnings.

The bear's feathered tracks led across one of the forest's sand roads, smoking hot as the dogs took up the trail. Roamer was leading the pack. Far back in the deepest recesses of the forest, Bad News reared up against a water oak and waited for the baying dogs that were on his trail. The rest is history.

When the dogs caught up with Bad News, Roamer came out of the woods fast. He plastered himself so completely between Lyle's legs that it took three of the brotherhood to remove him. Some commented the dog's tail was cemented, crotch to chest, and could never be removed except surgically. So much for fleeting power.

Like I say, a dog is a wonderful thing—maybe. ❶



The Realities of EXTINCTION

The overall worldwide extinction rate may well have reached
100 species per year and continues to increase.

By Don A. Wood

There are three ways a species can be rendered extinct. One is through *evolution*, whereby over geologic time a species changes from one form into another as an adaptive response to environmental change that is often climatic in nature. All species extant (still existing) today evolved from earlier forms, all of which are now extinct although their descendants live on. Also called *speciation*, evolutionary extinction therefore ensures transmission of successful genes through geologic time and always involves replacement of one form with another so that as ecosystems change over time their individual—but interrelated—components (called niches) remain occupied and functional.

The evolutionary progression of the horse has been well documented and is therefore a good example. During the Eocene Period, about 50 million years ago, there existed a dog-sized creature called *Eohippus*, also known as the "dawn horse." Through subsequent eras, *Eohippus* evolved into *Orohippus*, then *Epihippus* and so on. Each form was more horse-like in appearance, and the end result is the horse family of today—horses, zebras and asses.

A second form of extinction is terminal from an evolutionary standpoint and is often called *catastrophic extinction*. It results either from a single natural event, such as a volcanic eruption, or environmental change too rapid or radical for a given species' adaptive capabilities to accommodate. The mass extinctions of the dinosaurs is a good example of the single event phenomenon.

Nearly all dinosaurs became extinct at about the same time, approximately 65 million years ago near the end of the Cretaceous Period, due apparently to a single devastating occurrence. There is growing evidence that a huge meteorite or comet struck Earth, raising such an immense volume of dust and debris that it permeated the earth's atmosphere, severely curtailing the amount of sunlight reaching earth for a considerable period of time. The larger plants died for lack of sunlight and

herbivorous dinosaurs consequently died of starvation, followed by the carnivorous dinosaurs, which fed for the most part on the herbivorous dinosaurs.

The rapid change phenomenon is exemplified by a large number of extinct species through geologic time (the sabre-toothed tiger and mammoth are examples), with extinctions often being associated with advancing or retreating ice ages. Today, some think the California condor is on an unalterable natural course toward extinction, and has been for hundreds of years, due to its inability to adapt to some ongoing subtle changes in its environment. It has also been speculated that some of the desert fishes of Nevada and Utah are also doomed to eventual natural extinction. Much of Nevada and Utah was once a vast sea which has been slowly drying up for thousands of years.

But both evolutionary and catastrophic extinctions have had one thing in common—the natural order of things was not disrupted. Either an extinct species was replaced by something else, slowly over time, or the ecosystem in which it occurred was so altered that a given niche was squeezed out. The interrelationships among elements of a given ecosystem were therefore not severed, nor was the overall balance within an ecosystem irrevocably broken down by eliminating one or more occupants of the interdependent niches comprising it.

But such is not the case with the third form of extinction—those caused by man. When extinction is man-induced, it is not gradual, allowing evolution to replace the loss, and it nearly always involves the elimination of a given element in an otherwise balanced, interrelated and interdependent ecosystem. The result is lower species diversity, imbalanced relationships and thereby weakened overall ecosystem stability. Virtual ecosystem collapse can be the ultimate outcome.

But ecological health and stability should not be our only cause for alarm in terms of the implications of man's rendering species extinct. It is to man's own best interest to preserve as many species as possible. Many scientific and medical breakthrough have come as a

result of research on plants and animals and many chemicals vital to man's health and welfare are extracted from the properties of individual species. For example, a large percentage of prescriptions written in the United States each year contain drugs of natural derivation, as do many over-the-counter drugs. And only a tiny fraction of the Earth's plant and animal species have been investigated and analyzed in terms of the potential benefits their unique properties might have for man. So when we either purposefully or negligently commit a species to extinction, we forever forego whatever utilitarian benefit it may have been to us.

There is no way of knowing how many species have already become extinct at the hands of man. Only fairly recently have we developed enough knowledge, and interest, to even approximate accurately chronicling the biological repercussions of some of our exploitative, and negligent, actions. What we do know, though, is that extinction is occurring at a more rapid rate all the time. From the year 1500 to 1900, nearly 200 vertebrate extinctions are known to have occurred, an average of about one every two years. The extinction rate since 1900, however, has soared, paralleling the world's soaring human population growth, with known vertebrate extinctions over that time span exceeding 230. But those numbers are undoubtedly conservative considering many extinctions have occurred without our ever having known it, especially in Third World countries where environmental safeguards have been relatively uncommon and scientific accountability has been low. Moreover, in most cases, before a species is universally accepted as extinct, a considerable amount of time must elapse without it having been sighted. The list of species for which there have been no recent sightings is quite long and, although still hopefully regarded as extant, many, if not most, of those are undoubtedly gone also.

In any event, recent estimates are that the overall worldwide extinction rate may well have reached 100 species per year and continues to increase. Should that estimate be accurate, and should the extinction rate continue increasing at the current rate, we may lose 500,000 to 1,000,000 species over the next 25 to 30 years.

Man's agents of extinction have been sundry. Until well into this century, overhunting (for the market, for subsistence or for predator/nuisance control) was a principal causative factor. The extinction of the passenger pigeon is a classic example. And, unfortunately, often after overhunting had reduced a

species to a point of critical rarity, museums from throughout the world would outfit collecting expeditions in a competitive frenzy to secure the last remaining individuals. Both the great auk and the Carolina parakeet suffered such ignominious fates.

Introduction of exotics, which either prey on or out compete native species, has also been very important as an extinction-causing factor. Such introductions have been most devastating on islands, where delicate ecosystems typically contain species that evolved in the absence of competitors and/or predators and therefore developed no defense mechanisms against them. A full one-third of the bird species that once inhabited the Hawaiian Islands are extinct, and another one-third are now endangered, nearly all due to man's intentional introduction of exotic cage birds, ornamental plants, mongooses, goats, pigs and an array of others, and the unintentional introduction of rats, mice and disease vectors such as insects.

Sometimes overhunting and exotic species have worked in concert to exterminate a species. The extinction of the oft-cited dodo of the Mascarene Islands is an example. Sailors slaughtered dodos to replenish ship larders, and introduced pigs and monkeys ate dodo eggs and young (dodos were ground nesters).

However, although overexploitation and introduction of exotics are still having impacts worldwide, habitat destruction and degradation now are by far the most insidious and prevalent extinction-causing factors. Especially devastating have been drainage of wetlands and clearing of forests for agricultural uses and urban and residential development, along with air and water pollution.

North America has fared better than some other areas, but the situation here is bleak nonetheless. Of the nearly 450 vertebrates known to have become extinct worldwide since 1500, 59 continental and five inshore marine species, or about 15 percent, were native to North America. Fourteen Florida species were among those (although in some cases, hope still flickers that they still exist), three having become extinct prior to this century and 11 since 1900. The remainder of this article consists of brief discussions of those 14 extinct Florida natives, arranged in the estimated chronological order they became extinct. At least four additional formerly native species—the eastern gray wolf, whooping crane, Key West quail dove and Zenaida dove—are also no longer resident, although they still occur elsewhere.

PAINTED VULTURE (*Sarcorhamphus sacra*)

Whether or not the painted vulture ever actually existed has been debated for many years, but nonetheless the eminent naturalist William Bartram described a white-

tailed, multi-colored, rather smallish vulture from along the St. Johns River above Lake George in his *Travels*, published in 1791, and many accept the description as valid. It has not been seen since, and some think Bartram saw a king vulture, which ranges from central Mexico to

Argentina, that either represented a relict population of that species or got to Florida through some freakish natural occurrence. His description very closely resembles that of the king vulture. Why the painted vulture became extinct is unknown, but it was probably due to either

natural events or exploitation by Indians for its feathers.

EASTERN BISON

(*Bison bison pennsylvanicus*)

The eastern bison ranged through a considerable portion of the Eastern United States, including north-central and northwest Florida. It was larger and darker in coloration than its western cousin, the plains buffalo, and its back was not nearly as humped. Overhunting by settlers and habitat destruction, especially intentionally set fires, caused its extinction. It is thought to have become extirpated from Florida around 1800. A cow and calf killed in West Virginia in 1825 is the last verified record of the species.

ATLANTIC GREY WHALE

(*Eschrichtius gibbosus*)

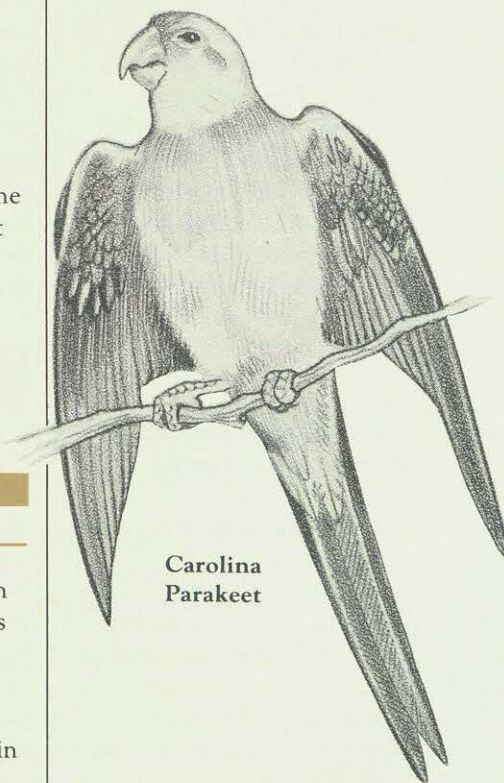
The reported range of the Atlantic grey whale was the "northern Atlantic Ocean," but considering the migratory habits of the closely related, if not conspecific, Pacific grey whale, it may have occurred seasonally in Florida waters, although there are no records of such. Some taxonomists question whether or not it was a distinct species, or even subspecies, from the Pacific grey whale, but in any event overhunting by New England whalers caused its extinction in the Atlantic perhaps as early as the 1730s, although unverified reports persisted from then through the 1860s.

PASSENGER PIGEON

(*Ectopistes migratorius*)

The demise of the passenger pigeon is a graphic illustration that there is no safety in numbers. It was the most numerous bird that ever existed, anywhere in the world. Some individual flocks numbered in the tens of millions, perhaps even hundreds of millions. Early naturalists reported observing flocks that darkened the sky and took several hours to pass overhead. In the early- to mid-1800s, the

passenger pigeon, in numbers alone, accounted for an estimated 40 percent of the entire bird population of North America, and its range was only the eastern one-half of the continent. That such a numerous species could become extinct is almost incomprehensible, but the fact remains that the last confirmed passenger pigeon sighting in the wild occurred in 1900, in Ohio, and the last known individual, a captive-born female named Martha, died at age 29 in 1914 in the Cincinnati Zoo. In Florida, the passenger pigeon was a winter resident only, ranging throughout the panhandle and in the peninsula from the Gainesville area northward. It was last seen in the state in 1893, near Archer, although there is an unsubstantiated report of a flock seen in Taylor County in 1907. Passenger pigeons were popularly served in restaurants as squab, and decades of mass slaughter for that market, and for subsistence purposes, was the primary cause of the species' extinction.



Carolina
Parakeet

CAROLINA PARAKEET

(*Conuropsis carolinensis*)

Ironically, the last known Carolina parakeet died in 1914 within a

month of the death of the last known passenger pigeon and also at the Cincinnati Zoo. The species was the only member of the parrot family (Psittacidae) ever native to the United States and ranged throughout the Southeastern states, including virtually all of Florida. It was a relatively small parrot, about 12 inches long, with a green and yellow body, orange-yellow head and long pointed tail. Carolina parakeets were seed and fruit eaters and persecuted as such by farmers, as well as exploited to some degree for food and for their feathers. They occurred in flocks and apparently were altogether unafraid of man, refusing to fly away even when being shot at. Entire flocks could therefore be killed so long as one's shotgun shells lasted. In Florida, the species was last seen conclusively in 1904, in Okeechobee County, although unverified reports persisted through the 1930s. Sadly, once the species was reduced to such low numbers that extinction appeared imminent, museums from throughout the world outfitted expeditions to collect the few remaining individuals. It is believed that, even though the species had become extremely rare, it would have survived had not that orgy of "scientific" collecting been perpetrated.

FLORIDA BLACK WOLF

(*Canis rufus floridanus*)

The Florida black wolf once ranged throughout Florida, Georgia, Alabama, Tennessee and South Carolina, and was one of three subspecies of the red wolf, the ▷



others once occurring from east Texas eastward through Louisiana, Arkansas and Mississippi; and northward to Illinois and Indiana. Two of the subspecies, including the Florida black wolf, are altogether extinct and the other very nearly so, surviving only in captivity. As its name implies, the Florida subspecies was very dark in coloration. It inhabited swamps and forests, and, as one would suspect, was killed at all opportunities by settlers out of unjustifiable fear. A bounty was even in effect on the wolf until the late 1800s. The last record of a pure black wolf was one killed in 1908, but an intergrade black and red wolf was killed in 1917 and sighting reports persisted through the early 1920s.

CARIBBEAN MONK SEAL (*Monachus tropicalis*)

The Caribbean monk seal once occurred throughout the Caribbean, including coastal southern Florida, and was hunted to extinction for its hide, oil and for food. It has not been seen conclusively since the early 1940s, although unverified reports persisted through the early 1960s. The last record for Florida was one killed near Key West in 1922. Two closely related species, the Hawaiian monk seal and Mediterranean monk seal, are in danger of meeting a similar fate for the same reasons, although protective measures for them have been instituted, hopefully in time to save them.

PALLID BEACH MOUSE (*Peromyscus polionotus decoloratus*)

The pallid beach mouse was one of seven subspecies of beach mouse resident in Florida, and it occurred among the coastal dune systems of Volusia and Flagler counties. It fed on the seeds of beach vegetation, principally sea oats, and, as its name implies, was paler in coloration than other beach mice. It has not been seen since 1946, despite a number of searches for it having been made

since that time. All beach mice are vulnerable in that their beach-front habitat is also much preferred by humans, but not only because beach development usurps or degrades beach mouse habitat. Human habitation brings with it the problems of introduced house mice invading beaches and out-competing beach mice for living space, and, perhaps more important, free-roaming pets—especially house cats—preying on them. The pallid beach mouse no longer exists for those reasons, and two of the other six subspecies, the Perdido Key beach mouse and Choctawhatchee beach mouse, both native to the panhandle, are very near extinction for the same reasons.

CHADWICK BEACH COTTON MOUSE (*Peromyscus gossypinus restrictus*)

As its name implies, the Chadwick Beach cotton mouse was restricted to the Chadwick Beach area near Englewood in Sarasota County. It apparently occurred in both coastal dune systems and in palmetto and live oak hammocks. It has not been seen since 1938, and two recent intensive live-trapping efforts failed to turn up a single individual. Destruction of habitat through beach development, and possibly associated introduction of competing house mice and predatory house cats, caused its extinction.

GOFF'S POCKET GOPHER (*Geomys pinetus goffi*)

The Goff's pocket gopher was restricted to an area along the Pinēda Ridge near Melbourne in Brevard County, and has not been seen since 1955. Range-wide surveys in 1974 and 1978 resulted in no evidence that the species still existed, and considering that pocket gopher mounds are fairly conspicuous, there is little hope that any went undetected. Much of the species' former range has been developed for residential and urban purposes, and that habitat

destruction undoubtedly caused its extinction.

ESKIMO CURLEW (*Numenius borealis*)

The Eskimo curlew was a medium-sized shorebird with a long, down-curved bill. It ranged throughout the Western Hemisphere, nesting in Alaska and northern Canada and wintering in South America. It occurred sporadically in Florida during migration, the most recent indication of which being a reported sighting from Port Canaveral in 1960. Most recent sightings have come from coastal Texas, but none has been incontrovertibly substantiated since 1968.

Confounding the evaluation of Eskimo curlew sighting reports is the fact that, except under very close observation, this species is indistinguishable from the common whimbrel. Exemplary of that was that in 1981, two noted ornithologists sighted a flock of 23 birds in Chambers County, Texas, that they believed to be Eskimo curlews, but were unwilling to state such conclusively. Also called "doughbird," the Eskimo curlew was considered exquisite tablefare and unrestricted market hunting, especially during the spring northward migration through the midwestern prairie states, led to its apparent extinction.

AMERICAN IVORY-BILLED WOODPECKER (*Campephilus principalis principalis*)

The Cuban ivory-billed woodpecker was recently confirmed to be extant, but the American ivory-billed has probably not been so fortunate. The last apparently valid sighting was in 1971 in Louisiana. In Florida, it was last seen conclusively in 1969 in Highlands County. Unconfirmed reports continue being made to date, but the ivory-bill closely resembled the common pileated woodpecker, and all recent reports, when investigation was possible, have turned out to be that latter species.



The ivory-bill was the largest woodpecker native to the United States, roughly crow-sized, with black and white body coloration and a prominent crest on top of the head. Males' crests were red whereas females' were black (in the pileated woodpecker, both sexes' crests are red). Ivory-bills required large expanses of river bottom or cypress swamps and the intensive logging of such habitat throughout this century has led to their probable extinction.

BACHMAN'S WARBLER (*Vermivora bachmanii*)

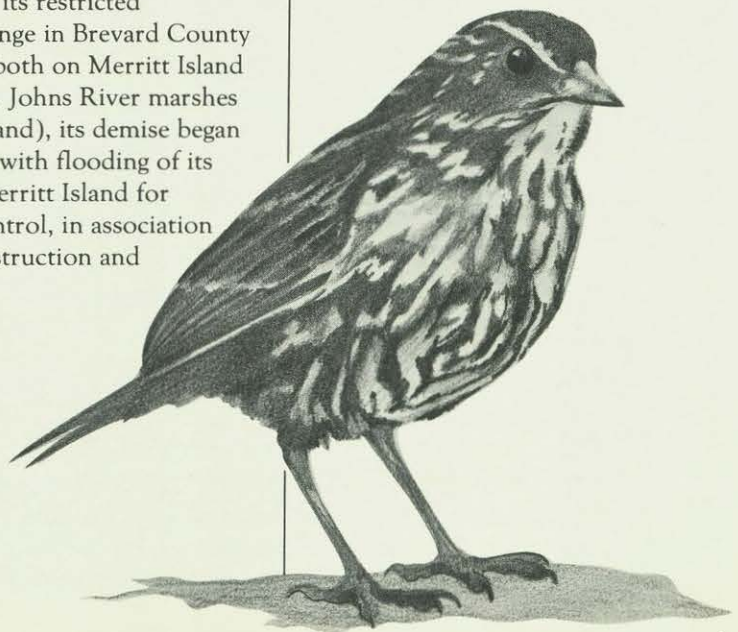
Although the Bachman's warbler has not been conclusively seen since at least the early 1970s (some believe the last valid sighting was in 1962), many believe it to be extant based on its history of being cyclically observed. It was not reported seen anywhere from 1833 to 1886, but then, inexplicably, large numbers were seen and collected thereafter until near the end of the century. It was reported as still common until about 1910, but at that time reports began becoming scarce once more. Only a very few confirmed reports have been made since the 1920s, but some think periods of rarity are the natural state of affairs for the species and that it will eventually rebound once more, as it apparently did in the late 1800s. However, considering that numerous

unsuccessful searches for it have been made in recent years, and much of its preferred nesting habitat—swamp thickets—has been destroyed, such is, unfortunately, unlikely. There is one old wintering record for Florida, but apparently the Bachman's warbler occurred in the state normally only during its spring and fall migrations to and from its nesting range (southeast Missouri eastward to South Carolina) and its winter range (Cuba and the Isle of Pines). Only two confirmed sightings of the bird have been made in Florida during this century, one in 1909 and one in 1951. Why the species became extinct, if it is, is not altogether clear. Nesting habitat destruction through timbering and/or intensive and excessive killing by collectors in the late 1800s have been suggested as the primary causative factors, while some others believe that the species has for some reason been on an unalterable natural course toward extinction for many years.

DUSKY SEASIDE SPARROW (*Ammodramus maritimus* *nigriscens*)

The dusky seaside sparrow has the unenviable distinction of being the first species whose extinction has been chronicled in minute detail, and is a classic example of how habitat degradation can affect a species. Once numbering in the thousands in its restricted marshland range in Brevard County (it occurred both on Merritt Island and in the St. Johns River marshes on the mainland), its demise began in the 1960s with flooding of its habitat on Merritt Island for mosquito control, in association with the construction and

maintenance of the NASA space center there, and drainage of the St. Johns River marshes on the mainland for agricultural and urban purposes. Then, in the early 1970s, the Beeline Highway was constructed, bisecting the last known concentrated population of duskies and irrevocably altering natural water flow patterns necessary for marsh character maintenance. As a cumulative result, the dusky was last seen on Merritt Island in 1977, and surveys on the mainland yielded 26 in 1977, 24 in 1978, 13 in 1979 and six in 1980, all of which each year were males; no females have been seen since 1976. The 1979 and 1980 surveys were extremely intensive in nature, utilizing helicopters and an army of volunteers to search every acre of potential habitat. With extinction eminent, a decision was then made to take the surviving males into captivity for safekeeping and interbreeding with females of closely related subspecies. Five of the six remaining males were subsequently located, captured and remanded to the care of the Santa Fe Community College Teaching Zoo in Gainesville, and later transferred to Walt Disney World's Discovery Island Zoological Park near Orlando. As of spring 1987, only one of the males still survived and the interbreeding program had been largely unsuccessful. ❶



FIFTY YEARS OF WILDLIFE RESTORATION

By John Waters Jr.

When the first European explorers and immigrants began to settle in and live off the wilderness of the great North American continent, wild animal life was incredibly plentiful throughout the land. Uncountable ducks and geese

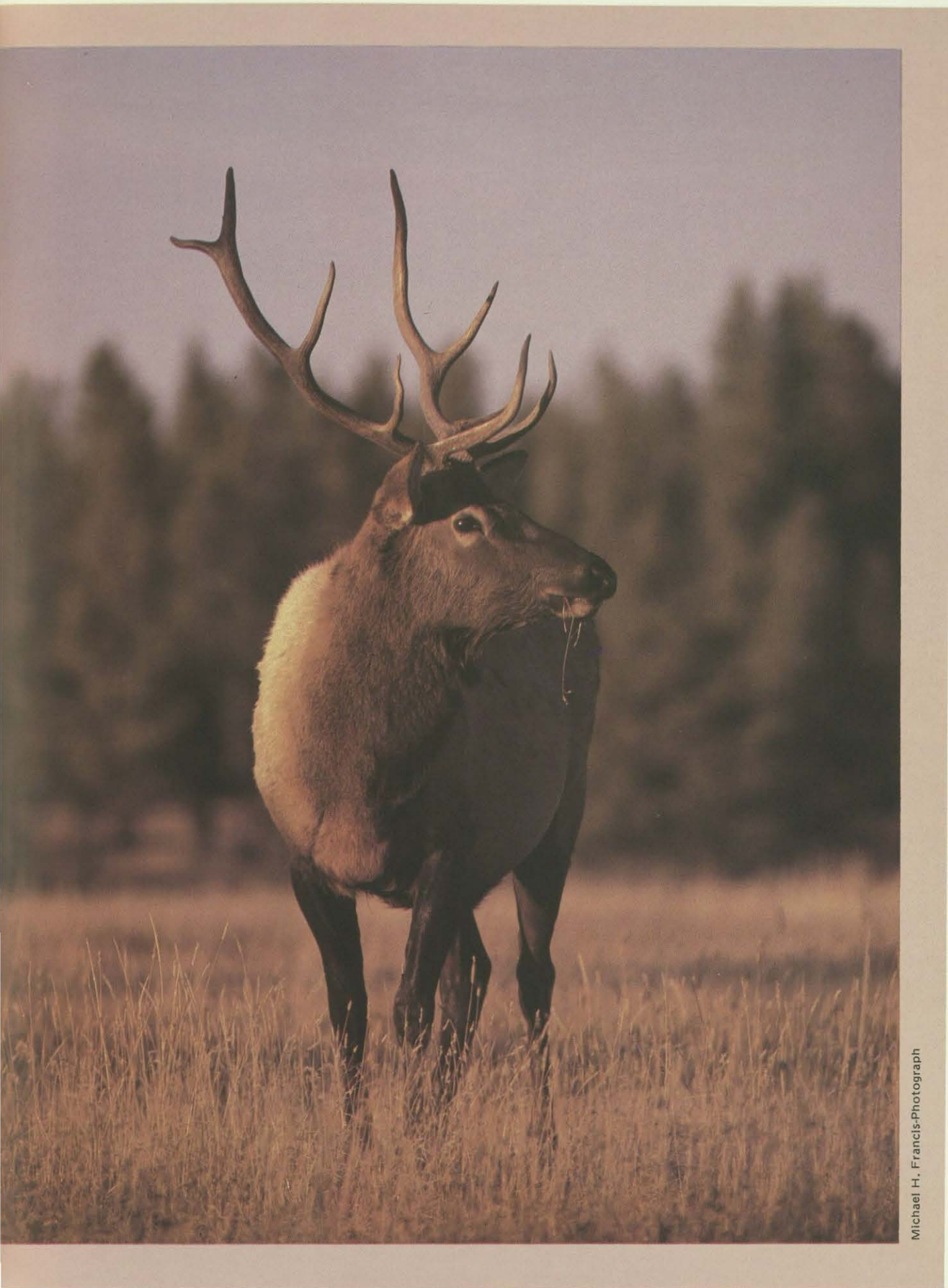
flocked and migrated twice yearly along ancient flyways, soaring across America from north to south during the fall, and back to their breeding grounds in spring. Waterfowl were seasonally plentiful upon the ponds, lakes, rivers, swamps and bays of most of what is now the contiguous United States.

Wild turkeys were also plentiful in many states, as were white-tailed deer, bison, elk, antelope and other valuable game species. However, by the early decades of the current century, many of our most valuable species had been so severely overharvested for food and other uses that many were in imminent danger of extinction, and some had already become extinct.

By 1825, the once common eastern bison was extinct, and by the late 1800s, America's once strong and graceful eastern elk herd had been hunted to extinction. The depletion of the eastern elk and eastern bison from their former range left only their western counterparts to roam wild in the United States. Mostly confined to the less populated American West, the western elk and western bison both came close to meeting the same fate during the years immediately following the killing out of the eastern herds.

Extinction of living species in the United States had occurred before, during the natural course of life on Earth and, for some species such as the mammoth, because it was heavily hunted by prehistoric peoples. However, the process was accelerated by America's new immigrants from other continents. Using their more sophisticated technology, America's new market hunters relentlessly sought game to meet an increasingly urban ▸

Prior to the 1800s, the eastern elk, a subspecies almost identical to the Rocky Mountain elk shown here, was very common in the Eastern United States. Like the western elk, the eastern elk was a grazer. Overharvesting for subsistence and by market hunters caused extinction of the eastern elk. Later, the western elk almost met the same fate, but was restored by successful conservation measures made possible by Pittman-Robertson funds.



Michael H. Francis-Photograph

The 1937 Pittman-Robertson Act was the first major funding program for wildlife other than waterfowl. Since its beginning, more than \$1.5 billion has been collected.

America's hungry appetite for wild meat. It was an appetite that caused America's finest game animals to become scarce throughout the land. Destruction of habitat was also a factor in reducing some wildlife populations.

Other game species that previously ranged in the Eastern United States during the 1800s, including species that were found in Florida, became extinct by 1900. One of these, the passenger pigeon, had been hunted to extinction in the wild by then. This species disappeared forever because of overexploitation by a few marketeers who used such means and methods as nets and shotguns to take the pigeons in great numbers from their roosting trees at night. Often, whole flocks of hundreds of passenger pigeons were taken to meet a demand for squab, the dark and tasty meat of the pigeon.

The causes for the declines of remaining wildlife populations were noticed in the nick of time, however, by a few concerned and active conservationists. Even though the turn of the century was a time when scientific study of wildlife populations was in its infancy, it was very apparent by then that America's wildlife could not take care of itself in the presence of modern man. Slowly, Americans began to realize that swift and effective action was going to be necessary if dwindling wildlife populations were going to be saved. In the years since then, many have supported the cause and unselfishly contributed to the greatest exercise in wildlife conservation ever to be known on Earth.

By the mid-1930s, the conservation movement in the United States was popular, going strong and was gaining momentum. It had become a growing cause among ethical sportsmen and others who understood the causes of declining wildlife populations, and who knew that immediate and long-term actions were necessary to save the diversity of our species. They also knew that action had a price.

It was in this background that a federal aid program, the "Federal Aid in Wildlife Restoration Act," was created by Congress. Popularly known as the "Pittman-Robertson Act," (so named after its two most active

sponsors, Senator Key Pittman of Nevada and then-Representative Willis Robertson of Virginia) the bill was signed into law September 2, 1937 by President Franklin D. Roosevelt.

The Pittman-Robertson Act extended an existing 10-percent excise tax, which the Congress and President had previously passed to tax the sale of firearms and ammunition used for sport hunting. The new act, however, also specifically provided for funds collected from the tax to be used directly for wildlife restoration, by distributing the money to the various states. Although Pittman-Robertson was not the first major conservation law, it was one of the most significant ever to be adopted in this country.

In 1903, Congress had enacted laws to set up the National Wildlife Refuge System. Later, in 1929, Congress enacted the Migratory Bird Conservation Act, which was intended to expand the National Wildlife Refuge System by authorizing land acquisition for the benefit of wildlife. However, neither the system nor the new acquisition act provided a viable means for the funding that was needed to acquire habitat and pay for management.

The first major conservation funding program was instituted in 1934 when Congress passed the Migratory Bird Hunting Stamp Act, which provided "Duck Stamp" dollars to finance waterfowl conservation. The Duck Stamp program would sell more than 87 million Duck Stamps and raise more than \$270 million by 1984. Nearly \$4.7 million of that was paid by Florida's hunters and other conservationists through their purchase of Duck Stamps. The program purchased some 89,290 Florida acres of prime waterfowl habitat during its first 50 years.

But, organized, funded wildlife restoration for species in addition to waterfowl did not get its first strong boost until Pittman-Robertson. Whereas the Duck Stamp program taxed only certain hunters—mostly those who hunted ducks, geese and swans—hunters who only harvested such species as deer, turkey and small game were not paying any taxes (for the most part) other than the fees charged for state and local hunting licenses. The ▸

North America's passenger pigeon was once so plentiful that great flocks darkened the sky. A taste for squab, the pigeon's dark meat, was in high demand from market hunters who used every possible means for killing the species to extinction. The last known passenger pigeon died in 1914, nearly a quarter-century before passage of the Pittman-Robertson Act.



In 1920, the estimated white-tailed deer population was only 1/2 million. After funding became available, restoration of this species was possible. Today, the white-tail numbers more than 14 million.

Pittman-Robertson Act was a law which taxed all hunters, and which provided funds for a broader spectrum of wildlife conservation than the Duck Stamp program provided.

Since the Pittman-Robertson Act became law, 50 years ago this coming September, more than \$1.5 billion has been collected in taxes—paid mostly by sportsmen. During the first half-century of Pittman-Robertson, the various states have contributed another \$500 million in funds—most of which was collected from hunting license fees—that have also been used specifically for wildlife restoration. America's game and nongame wildlife populations have benefitted tremendously from these funds.

During the 1987 fiscal year, the states will receive \$108 million directly from the Pittman-Robertson program, says the U.S. Fish and Wildlife Service, which administers the program. Florida will receive \$2,082,922 of the money, with about three-fourths of it being dedicated to wildlife restoration and the remaining one-fourth being provided for hunter education programs, which are available to hunters and nonhunters alike.

To appreciate some of the more significant benefits made possible by the Pittman-Robertson and state funds, the situation for our most popular game species, as it was in the 1920s and 1930s, needs to be considered:

In 1920, the white-tailed deer herd in the United States was estimated at less than a half-million animals. Today, more than 14 million live in the wild.

The wild turkey was very scarce outside a few of the Deep South states by 1930, but today ranges in nearly all the states, with an estimated national population of more than two million birds.

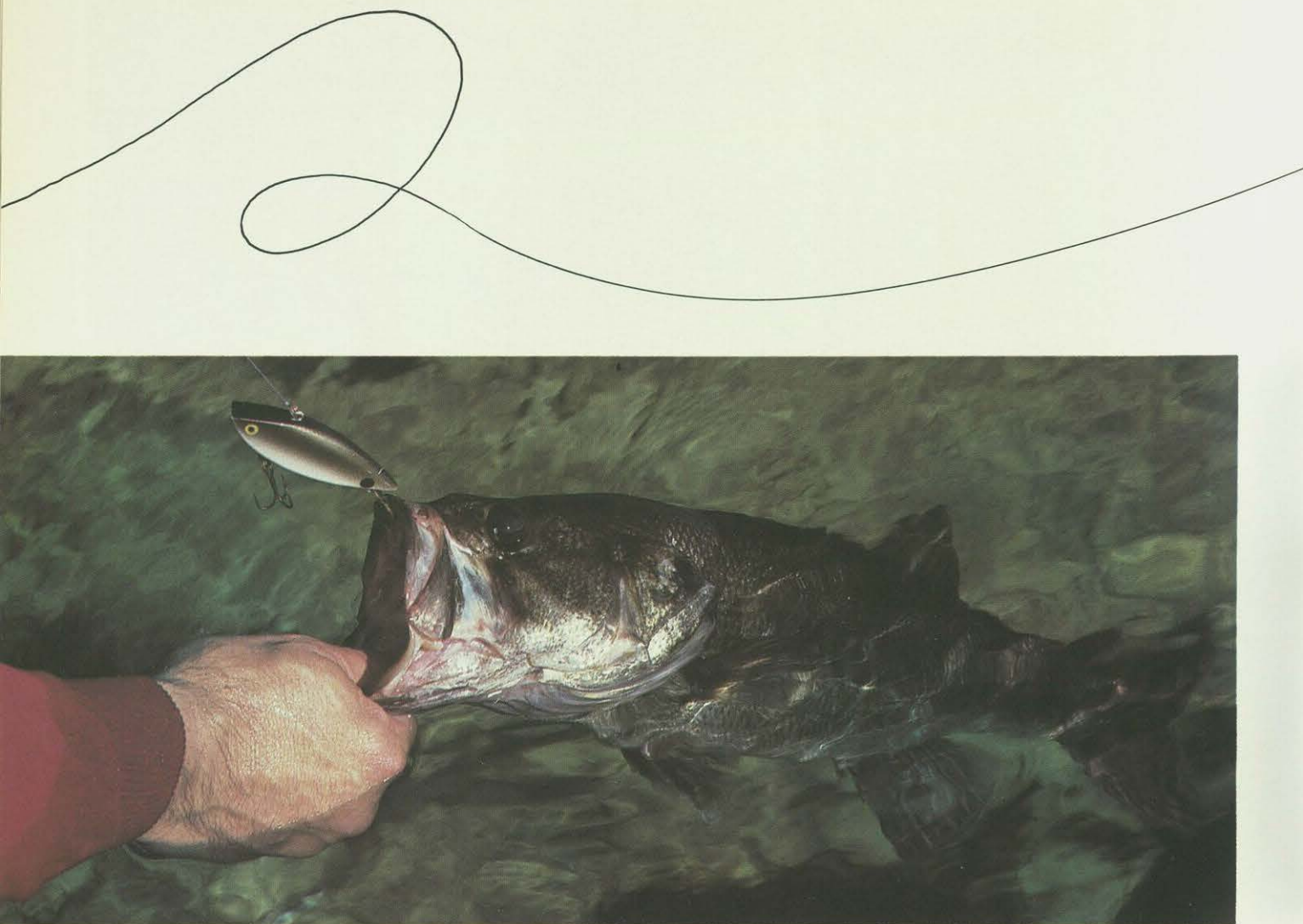
The North American (western) elk increased by five times between 1920 and today, and the pronghorn antelope by 30 times during the same period.

These dramatic changes, made possible by funding dollars paid by hunters and others who purchase sporting firearms, have benefitted wildlife, and in so doing, benefitted the American people. ❶

Only the plains buffalo (western bison) lives in North America today, but before 1825, there was an eastern subspecies which roamed from Florida to Canada in once great herds. Killed out completely, the eastern bison might have been saved had it survived into the years following Pittman-Robertson.



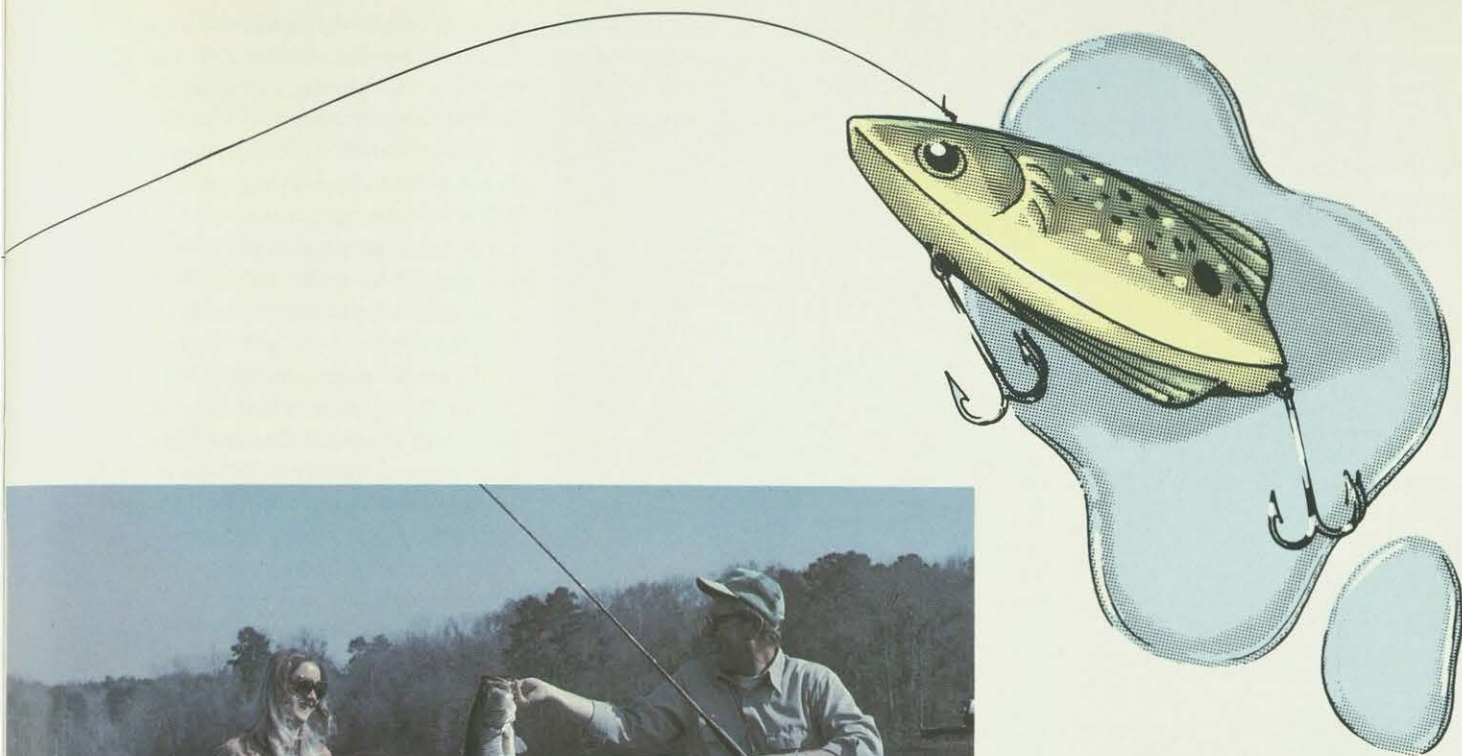
Michael H. Francis-Photograph



SHAKE, RATTLE AND REEL 'EM IN

Noisy, rattling lures are nothing new. Here's
the story on who started the trend, and
why and how they work.

Text and Photographs
By Bob McNally



The use of noise-making lures is popular with many anglers because fish will take them. They work because fish can detect sounds and accurately locate their sources.

At daylight we outboarded away from the boat ramp at Red and Sam's Tradewinds Marina to a far corner of Lake Jackson, near Tallahassee. Friend and ace angler Jim Strader guided his bass boat into a small cove lined with lily pads the size of elephant ears. When Jim stopped the boat for fishing, Charlie Biladou and I rifled out cast after cast, working weedless spoons and spinner baits lickety-split around the lilies. Jim used a plastic worm—a very special plastic worm—and slowly inched the lure back to the boat following each cast.

We fished for about an hour with no luck until Jim dropped the worm

in a pocket in the pads. He hopped the worm a time or two along the bottom and suddenly the lilies bulged about 10 feet away and a four-inch-high "V" wake streaked toward his lure. The fish took the worm, Jim set the hook and the fight was on. Jim grunted and groaned to horse the fish out of the pads, and after a few minutes, he worked it close to the boat and I netted it. The fish weighed a shade under 11 pounds.

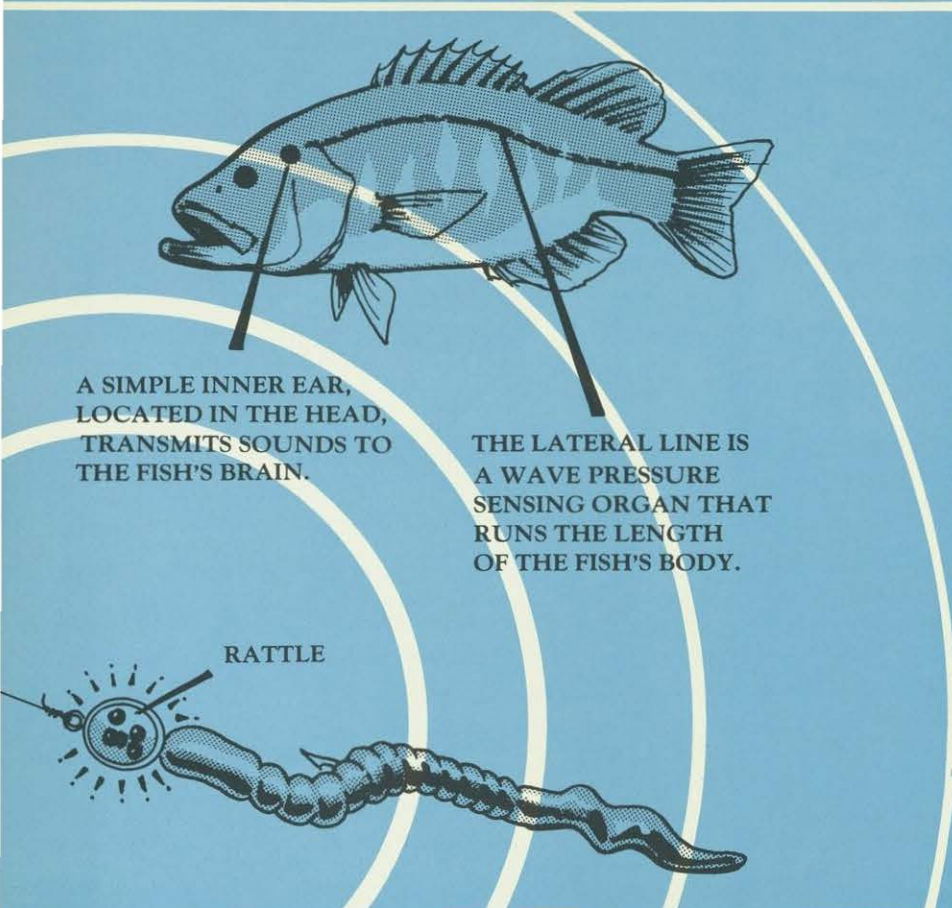
But Strader wasn't through. Before the day was over he caught a 10½-pounder, a seven-pounder and several other fish weighing between four and six pounds. Charlie and I

caught fish, too, but none the size of Strader's, even though we used plastic worms exactly like his and fished them in the same places and in the same manner he worked them.

That night over dinner, Strader confessed the secret of his success that day on Jackson.

"The only difference between what you boys were doing today and what I was doing is that I was using a Rattleworm Head and you weren't" he said straight-faced and serious. "Bass can hear noises and those I caught were attracted to the worms because of the rattling sounds the heads produce." ▸

HOW DO FISH "HEAR"?



A SIMPLE INNER EAR, LOCATED IN THE HEAD, TRANSMITS SOUNDS TO THE FISH'S BRAIN.

THE LATERAL LINE IS A WAVE PRESSURE SENSING ORGAN THAT RUNS THE LENGTH OF THE FISH'S BODY.

RATTLE

A few plugs were already on the market in those days that had lead shot in them that made rattling noises as they were retrieved, including a number of other "hard-plastic baits" invented by Jim and sold by his Strader Tackle Company in Havana. But "sound lures" still were very new in 1970. His Rattleworm Heads were just on the market and were completely unfamiliar to Charlie and me.

A Rattleworm Head is simply a hard plastic cone with a standard slipsinker leadhead fitted loosely inside. When the worm is fished, the lead flops around inside the plastic and creates rattling sounds that Jim claimed attracted fish because they are by their very nature curious. Once they are attracted close enough to the lure to see it, said Jim, they strike because of the worm's inherent bass-appealing action.

Charlie and I were polite that night, and listened intently. Saying we were dubious is putting it mildly.

But in the past 15 years, sound making lures have become very popular on the American angling scene. Virtually every tackle company that manufactures "hard" plugs makes some that emit rattling sounds. These days, there is no doubt that many lure companies make noisy plugs because that's what sells in tackle shops around the nation. Many anglers want their artificials to rattle when they're retrieved, and if that's what sells, that's what the lure companies offer. But it makes sense, too, that noisy lures must produce fish or else the legions of American anglers buying them wouldn't want them. Moreover, there is much evidence, some of it scientific, backing tackle company claims that noisy lures attract fish.

Ichthyologists have demonstrated numerous times that fish can detect sound almost as well as humans do.

Margaret E. Brown, an English zoologist, edited a book in 1953 called the *Physiology of Fishes*. It is a

two-volume compilation of various scientific papers, studies and opinions of fisheries biologists on various aspects of fish.

Brown stated, "The evidence in favor of sound perception among teleoste (bony fish) is thus impressive, and makes the assumption of a well-defined biological significance of hearing inescapable."

What this means, in plain layman's language, is that fish can hear. Just how well they can hear is documented further in Brown's book.

Brown writes: (in some experiments) "fish were trained to associate the whistle of the experimenter with the availability of food, and (they) also can be conditioned to the spoken human words, even to the extent of responding to, and distinguishing between the spoken words *Adam* and *Eve*."

This is important stuff to anglers. It shows scientists have documented that a fish's sound perception is so acute that it can distinguish noise and tone so well even sounds emitted above water can be perceived.

"We researched sound in lures years ago, and there's no doubt noises can be heard by fish and they are attracted to them," says Lanny West of Plastics Research and Development Corp. in Fort Smith, Arkansas. His firm owns three of America's largest lure manufacturers—Heddon, Cordell, and Rebel.

"American Indians used to attract and catch fish by clacking rocks under water. The clacking of the rocks attracted fish to their snares and nets and helped them feed themselves," West says. "I've clacked rocks together under water while snorkeling and it does draw fish—probably because they are naturally inquisitive."

Jack Davis of Welaka, Florida, owner of Jack Davis Lures, has been designing artificials for 28 years. In that time he's developed 96 different lures that have been produced by companies such as Heddon, Creek Chub, Manns and

Whopper Stopper. Over half of those baits have rattling devices inside them.

"Years ago Heddon demonstrated in a very thorough experiment on Lake Michigan that their rattling Tadpolly lure definitely caught more fish (salmon) than a silent Tadpolly," Davis states. "Another way of looking at rattling lures is that the noise they make sure can't hurt a guy's chances of catching fish...it can only help."

Rattling lures make plenty of noise in the water as they're retrieved. On many occasions I've gone under water with scuba gear and have heard a plug's rattling from long distances. It's possible to hear the lure from 20 feet or more, and that, says Strader, is important to fisherman bent on filling their stringers with not only largemouth bass, but also stripers, sunshine bass and other game fish.

Experiments have demonstrated that fish have a keen sense of hearing, and can even hear sounds from above the water surface.

"Fish can hear," Strader insists. "And I'm talking about with their 'ears,' not their lateral sense lines. A fish's lateral line is a wave-pressure receptor, nothing more. When something moves through the water it creates a pressure wave, and fish can feel this wave via their lateral line. This is how a school of fish can


move fast through the water in tight formation without colliding. They can perceive each other's wave pressure and avoid contact.

"It is well documented that fish have a complete auditory system. Basically, the only biological difference between a fish's hearing system and that found in humans is the lack of a cochlea...which is basically a pitch discriminator. Fish are still able to differentiate pitch, but just how this works remains a mystery to scientists.

"A fish's hearing is remarkably advanced. Scientists have demonstrated that fish can recognize the difference between two sounds. They can distinguish tone and pitch and they have the ability to determine the direction of the origin of sounds.

"Anyone who doesn't believe that only has to remember the last time he cast a plug and had a fish rocket from 20 feet away through timber or weeds to hit the lure. There's no way the lure's wave pressure could have had time to reach the fish's lateral sense line, and in weeds, timber or dark water, it's unlikely the fish could have seen the plug. There's no other way for the fish to have detected the lure except by *hearing it.*"

The knowledge that fish can hear has given lure design a totally new direction, resulting in more effective artificials, says Strader and many other lure company executives, as well as savvy anglers. A lure that emits sound is appealing to three senses a fish has—sight (lure action), feeling (wave pressure) and sound.

"Rattling lures are not meant to duplicate anything natural in the watery world of fish," Strader explains. "No minnow or frog or any other food makes sounds that rattle. A noisy lure is just designed to draw a fish's attention to the artificial. Once a fish notices the lure via sound, then its action, speed or color prompts the fish to strike. It's the combination of all these things that makes a fish hit, and sound is just one more aid an angler has to make his lures more appealing to fish." 



Succulent Suckers

The Secret's in the Cut

By John Waters Jr.

"I've got a bite! Ohhh!, he's a big 'un too! I bet ol' Tom couldn't eat this 'un."

Pete Scott was excited. He and Gene Tharpe were making the first run of the net for the night, pulling their small boat along through the crystal clear water. They had set the 100-foot-long gill net just after sunset, expecting to catch "humpy" suckers in Jackson County's spring-fed, sandy bottomed Compass Lake.

The fish was a nice one, about 14 inches long. It was the first catch of the night. Scott laid it in the livewell, where another half dozen would soon join it for the short ride back to the dock, where a livecage was holding about 30 suckers they had caught the previous night. There was no doubt there would be plenty of fish for the two dozen men gathered at the camp for a Friday night fish fry.

Amos Morris and Tharpe were the hosts for this supper, which was one of the group's regular get togethers. It was one of many fishing nights they would gather at Compass Lake to catch suckers for the annual Morris-Tharpe Sucker Fry, to be held in March. Morris is currently chairman of Florida's Wildlife Alert Reward Association. For 11 years he and Tharpe have

held their annual Sucker Fry to promote Wildlife Alert and to honor those who have supported the association and the cause of wildlife conservation in Florida.

The "flag net" Scott and Tharpe were tending was set without weights or floats. A line of poles stuck into the lake's bottom held it in place. In certain fresh waters of

Bay, Calhoun, Holmes, Jackson and Washington counties, it is a legal method for catching nongame fish from September 1 to May 1. Gill netting for suckers has been a tradition in those counties for decades, and there are still plenty of fish—game and nongame species—in the streams and lakes where the nets are allowed.



Stan Kirkland-Photograph

Often a cool-weather activity, sucker netting in Jackson County is a long-standing tradition. The species found in Compass Lake is known locally as the "humpy sucker."



"It's too bad so many people consider suckers to be *trash fish*," Tharpe said as Scott removed another lively sucker from the net. "We've been eating them all our lives in this part of Florida."

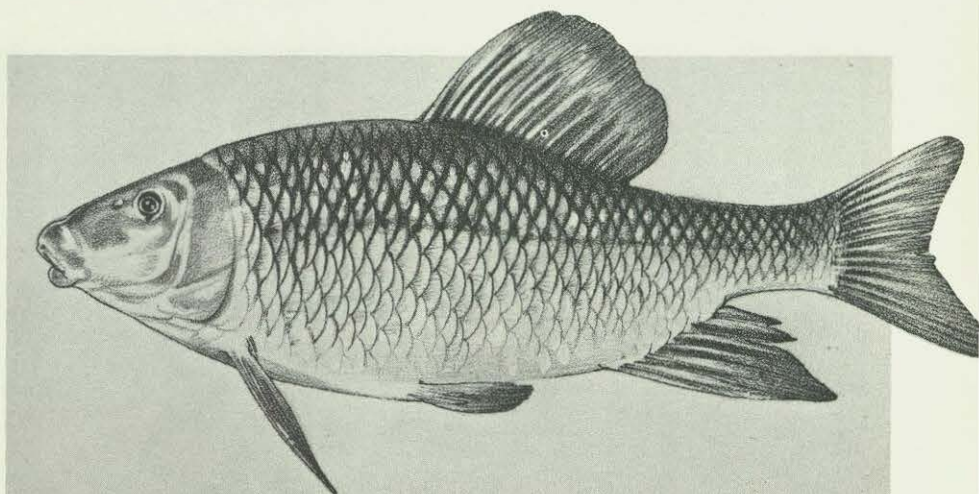
"Most folks just don't know how to prepare them properly," Scott added as he dropped another sucker into the livewell. "But the way we *gash 'em*, they're as fine to eat as any other fish."

Suckers have many small, *interstitial* bones which must be cut into short lengths to make the meat delectable. Unless the bones are cut, they make the sucker undesirable to eat.

"It takes a razor-sharp knife to *gash 'em* properly," Scott explained later, as he and Tharpe were docking the boat and joining several others who had already started cleaning the previous night's catch.

Tharpe gave a demonstration of what Scott meant by *razor sharp*. Taking one of the fish, and using quick, seemingly effortless shaving strokes with his knife, he smoothly removed the skin. Only clean, succulent flesh without any nicks on its surface remained.

Tharpe, Buck Barnes and others worked on a long, weathered table made of a wooden plank. The plank showed signs of having been used



Lake chubsucker ("humpy sucker")

many times before. First, each fish was scaled, then fileted. Next, the gashing was done. Barnes demonstrated the method with expertise.

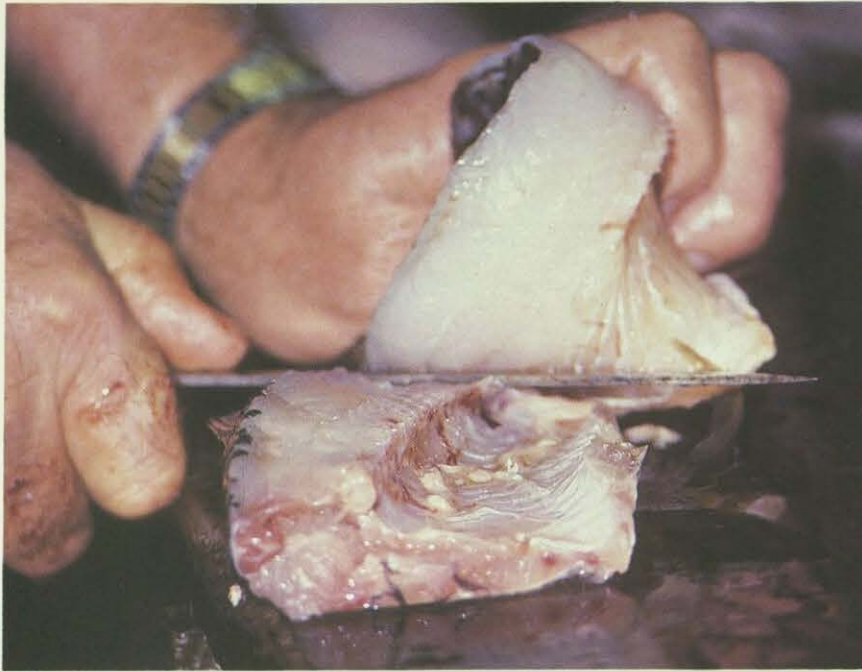
Before starting, he sharpened his knife a few strokes on a well-worn whetstone and steel. Then he picked up one of the filets, and in downward strokes, quickly made parallel rows of cuts, spacing them about one-quarter inch apart. He started at one end of the filet and gashed through the interstitial bones to the other end. His many smooth, perfect cuts were made uniformly about halfway through the thickness of the filet.

"A dull knife won't cut through the bones," Barnes explained. "It'll

just crush 'em a little."

Morris, Barnes and others had already prepared the outdoor kitchen for cooking the fish. A propane-fueled deep fryer would be used to cook the gashed filets to golden perfection. Inside a mobile home parked there as the camp house, a large kettle of cheese grits was simmering. During the season when the nets can be used, the men often gather to enjoy each other's company and keep alive a tradition that many of them first learned when they were boys.

"In the late 1930s," Morris recalled, "my family used to ride out here in a horse and wagon. We'd set up camp, sometimes with two or three other families. I was ▷



Preparation for the Morris-Tharpe Annual Sucker Fry begins with fileting and gashing the tender white meat. On the "big night," deep-fried fish, hushpuppies, cole slaw, baked beans and cheese grits make a feast in traditional Southern style.

about 7 or 8 years old when we first started coming to Compass Lake to camp and fish.

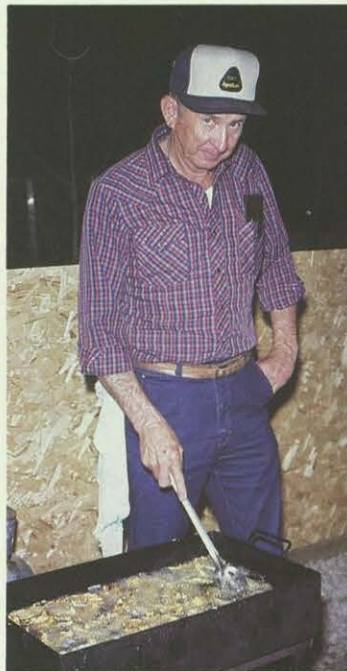
"We used the same kind of nets then as we use now—but other than that, things were a little different. We didn't have any battery-powered lights, like we do today. Our only lights were the moon, a kerosene lantern or sometimes a burning torch of lighter wood.

"We would sometimes stay for a few days, or maybe a week at the camp, fishing, swimming and otherwise relaxing from the usual work of life. We slept under a simple lean-to that we made by hanging a large canvas tarpaulin between two trees," Morris said with a smile as he recalled his early outdoor sporting experiences.

While Morris and others swapped stories about their many outdoor adventures, the freshly corn-mealed fish were being deep-fried to perfection in hot, bubbly oil. Steam was rising from the cooker and hands were quick to reach in and grab a sample whenever the fryer basket was dumped in a large paper-lined box.

Cole slaw was being mixed inside the camp house and hushpuppy dough was waiting its turn to be fried. Two dozen hungry men would soon sit down for an "all you can

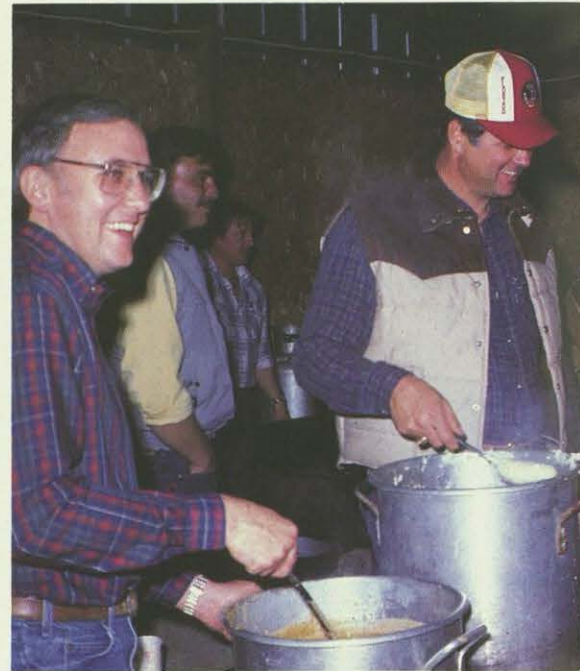
John Waters Jr.-Photographs



eat" feast, and the talk would turn to the big annual event in March. Many more fish would have to be caught.

When the big night came, nearly 200 guests met at Morris's place, where a long shed covered three rows of picnic-style tables and benches. Many of the guests were old-timers to the annual event, but some were there for the first time.

"Are those really *suckers* you're



cooking?," one of the new folks asked skeptically as a long line formed and headed for the piles of fried sucker, baked beans, cheese grits, hush puppies, cole slaw, pickles and tomatoes on the serving table near the cooking kettles. "I always heard you couldn't eat suckers," he said.

"Why of course we eat 'em," Scott was quick to answer. "The way we fix 'em, they're as fine as any

other fish. You just wait 'til it's your turn in line. You'll see what I mean."

Ahead in line, another novice was listening closely and curiously as Earl Holley explained the gashing technique and showed him a huge pile of ready-to-fry sucker filets.

Shortly after we sat down to eat, one old timer smiled and said to me, "You know, people just got it in their minds that if they've never eaten it before, there must be something wrong with it.

"But I'll tell you one thing; after tonight, there'll be a few more who know how good those ol' suckers are. One thing you can't fool is your own taste buds," he said as he got up from the table to go through the line again.

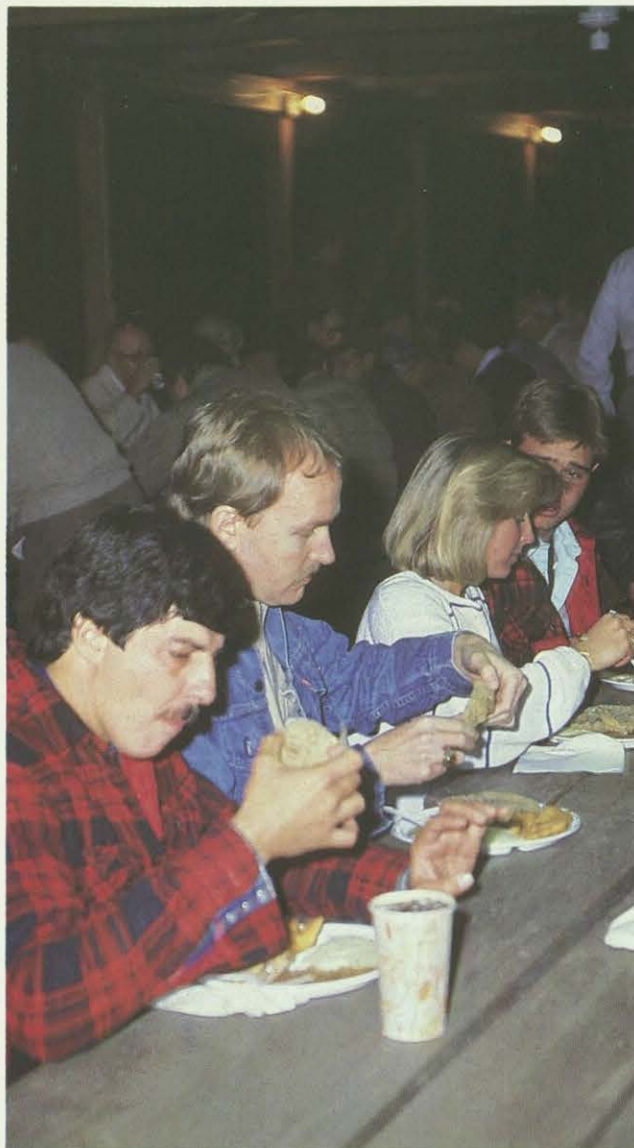
As I enjoyed the sweet, white, delicious fish, I had to agree. ⑦

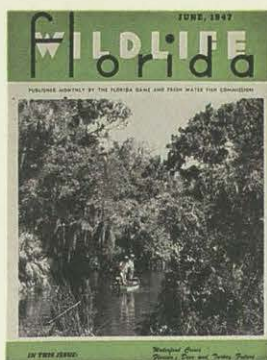
Editor's Note: See page 48 of this issue for toll-free telephone numbers for Wildlife Alert.

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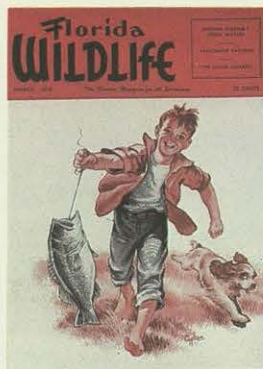




JUNE 1947



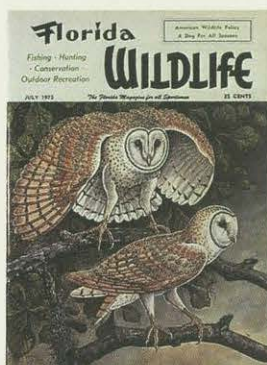
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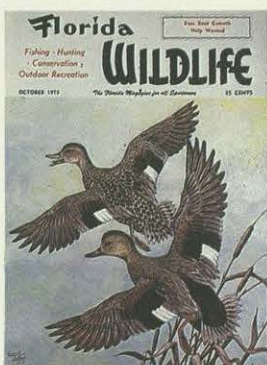
MARCH 1956



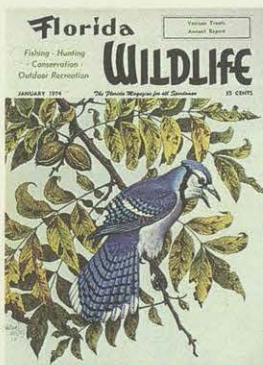
DECEMBER 1958



JULY 1973



OCTOBER 1973



JANUARY 1974



FLORIDA

With this issue, FLORIDA WILDLIFE reaches its 40th year of continuous publication by the Florida Game and Fresh Water Fish Commission. Since its inception, the magazine has been a joint venture between the Commission's staff and many contributing members of the public. In the 493 issues printed during these four decades, the magazine's writers, artists and photographers have told and illustrated the stories ►



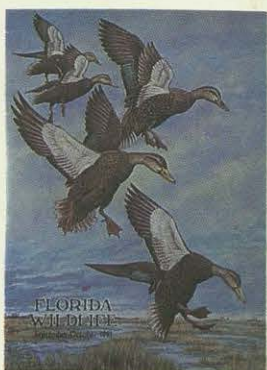
SEPTEMBER 1976



MAR-APR 1978



JUL-AUG 1978



SEPT-OCT 1981



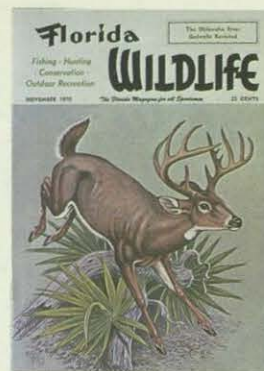
AUGUST 1964



JANUARY 1968



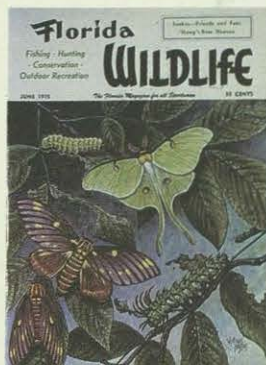
FEBRUARY 1969



NOVEMBER 1970



WILDLIFE®



JUNE 1975



JANUARY 1976



JULY 1976

of hunting, fishing, camping, conservation, natural history, exotic wildlife, extinction, restoration, how to better enjoy the outdoors and many more subjects. However, it has always been you, our readers, who have made FLORIDA WILDLIFE possible through your continuing support. To all of you, we extend our greatest appreciation. ①



MAR-APR 1984



JUL -AUG 1984



JAN-FEB 1986



MAR-APR 1987

MAY-JUNE 1987

Dan Townsend

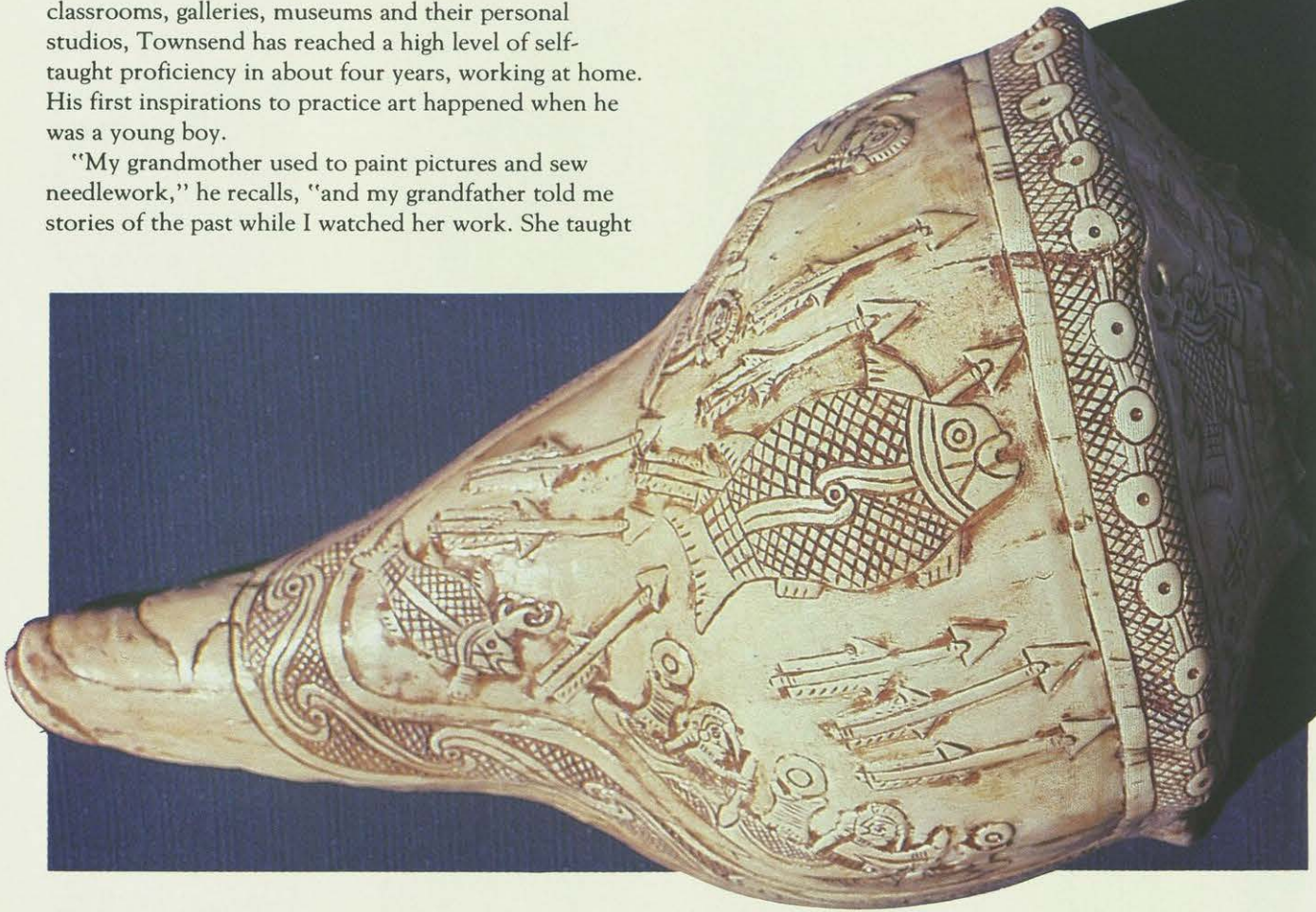
Artist in an Ancient Style

Text and Photographs by
John Waters Jr.

Dan Townsend is one of those rare artists who rapidly develop their talents and quickly master their medium. Although some artists spend many laborious, dedicated years of study in formal classrooms, galleries, museums and their personal studios, Townsend has reached a high level of self-taught proficiency in about four years, working at home. His first inspirations to practice art happened when he was a young boy.

"My grandmother used to paint pictures and sew needlework," he recalls, "and my grandfather told me stories of the past while I watched her work. She taught

Townsend spent many hours engraving this ceremonial drinking cup made of a whelk conch shell. His design is based on fragments of five cups found at Southeastern prehistoric sites.



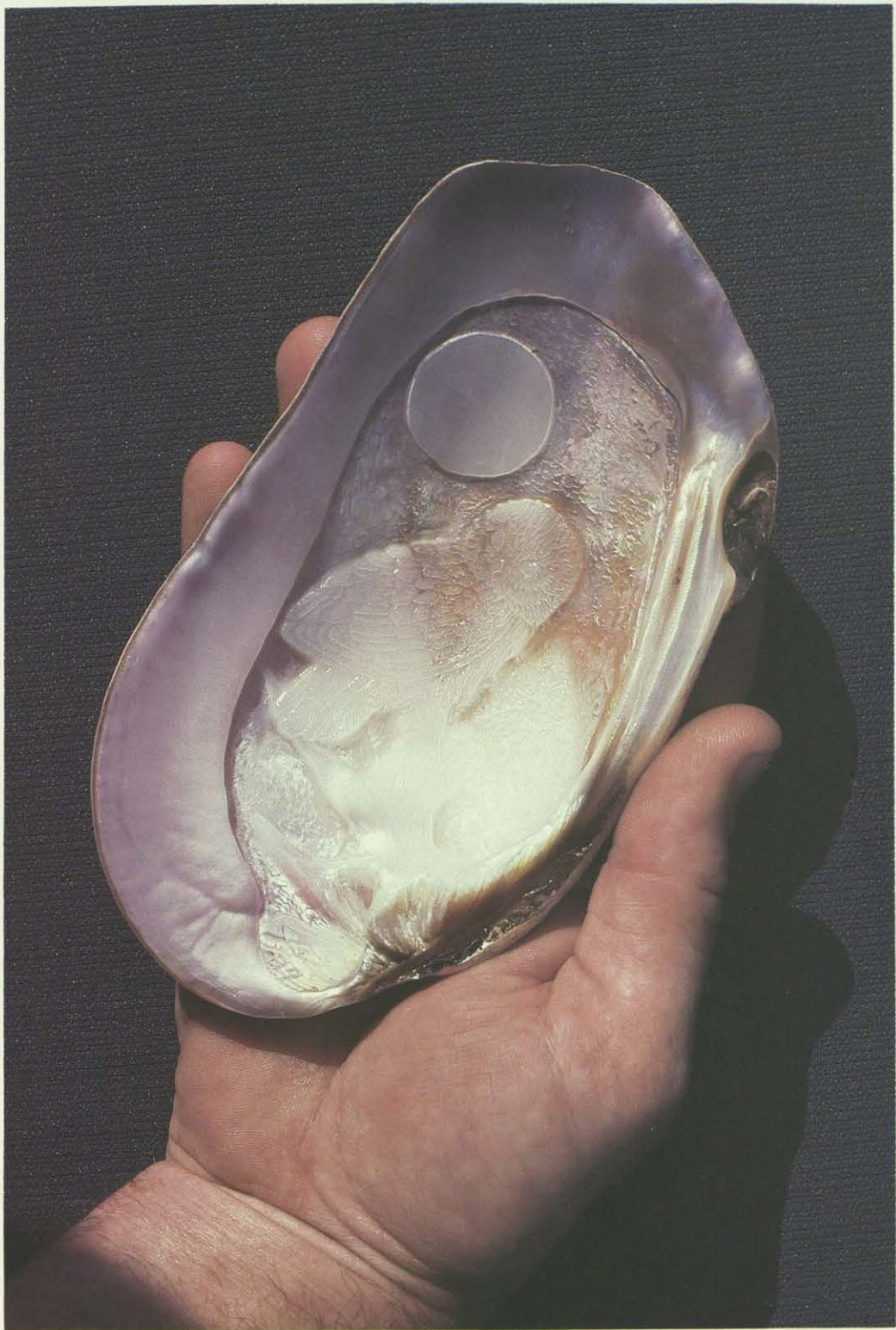
me to appreciate design and detail and he inspired me to seek out the past."

Townsend also credits Don Sharon, chairman of the Florida Tribe of Eastern Creeks, and Charles Daniels, museum curator and historian, with encouraging him to study and practice the various styles of Southern Native American prehistoric and protohistoric art.

Townsend, a part-Native American now living near Crawfordville in Wakulla County, has completed hundreds of museum-quality replicas that are based on artifacts such as burial goods, personal ornaments and

ceremonial objects that have survived the ravages of time in the Southeast. Working almost exclusively in shell, bone and antler, he also creates original designs of his own imagination.

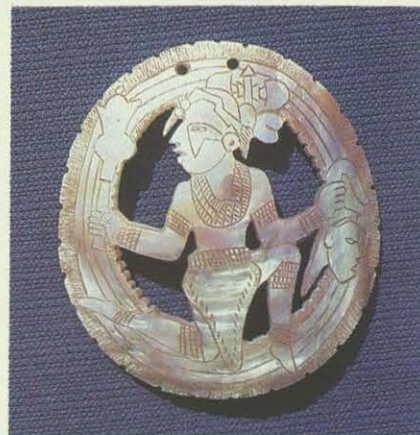
"Not much is generally understood about Southeastern Indian art," Townsend notes, "and when I exhibit my works, I spend much of the time explaining the traditions and cultural significance of the various images I carve. However, the meaning of many works of prehistoric art have been lost in time, so interpretation becomes important to more accurately understanding them. ▸



A large freshwater mussel shell was chosen by Townsend to engrave an owl with a full moon in the background. This design is one of his own creation.



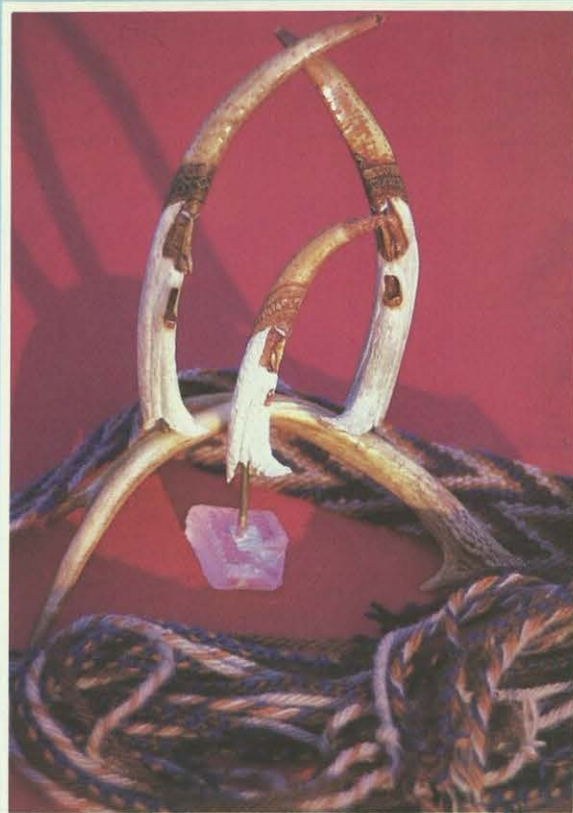
These gorges, ornaments worn around the neck, are engraved into sections of horse conch, whelk conch and queen conch shells. These species occur in the Atlantic Ocean or Gulf of Mexico. The designs here are based on different artifacts recovered at various prehistoric sites in the Southeast.



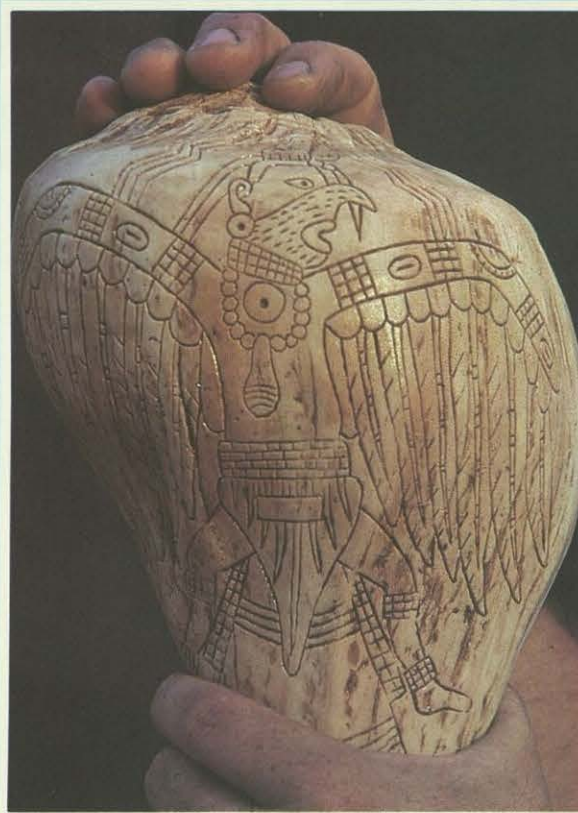
Townsend replicated this gorge from one that was found in Sumner County, Tennessee. It depicts a warrior in a victory dance.



Some of the shells Townsend uses are from the Pacific Ocean. The engraving on this one shows an eagle flying through a ring of fire. A tattoo inspired this one, he says.



The engraved "fighting wizards" shown here, in deer antler, are Townsend's original designs. The colorful sash in the foreground was hand-dyed and hand-woven in Southeastern Indian style by artist Richard Smith of Tallahassee.



Meticulously engraved in a whelk conch shell, this detailed work faithfully replicates an artifact found in Spiro, Oklahoma. The figure represents the bird-man deity.



These gorgets are made from helmet conch shell. At the left, two shamans are shown in ceremonial battle. On the right, the symbols represent the sun with the sacred fire (the sun's little brother) in the center.

"The more I study and practice this kind of art," he says, "the more I understand it and the more adept I feel at interpretation. It's a process similar to study of ancient Egyptian hieroglyphics. After working with them a long time, you begin to understand that the symbols are really a written language."

The natural materials he uses have long been used by humankind. Before pottery was made, shells were used for cups, personal ornaments and other articles. Antler and bone were used to make tools and weapons. It is interesting to note, too, that shells were used by cultures living far inland, as well as those who lived along the coast.

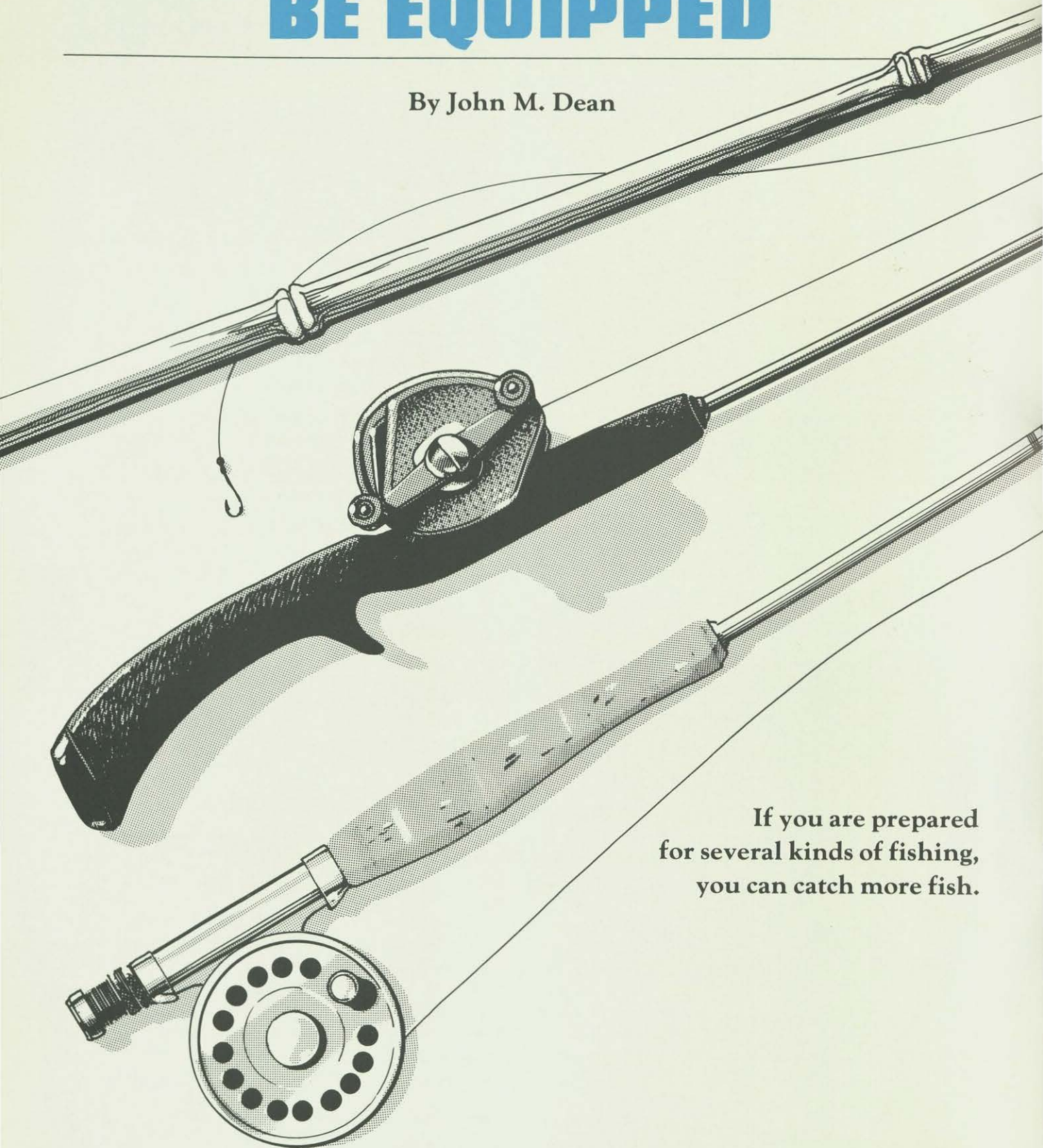
"Decorated and undecorated shells have been found at prehistoric sites all over North America," Townsend explains. "Shells were trade goods, as well as items to be used more directly. And they were a valued art medium for recording the people's history and symbolizing their belief system. The richness of wildlife and other living things in their art points to a basic idea that everything has life in it."

Townsend's works closely adhere to the philosophy that life is holistic, and each carefully crafted piece celebrates life itself. Like music, his art sings songs of harmony between man and nature. ⑦

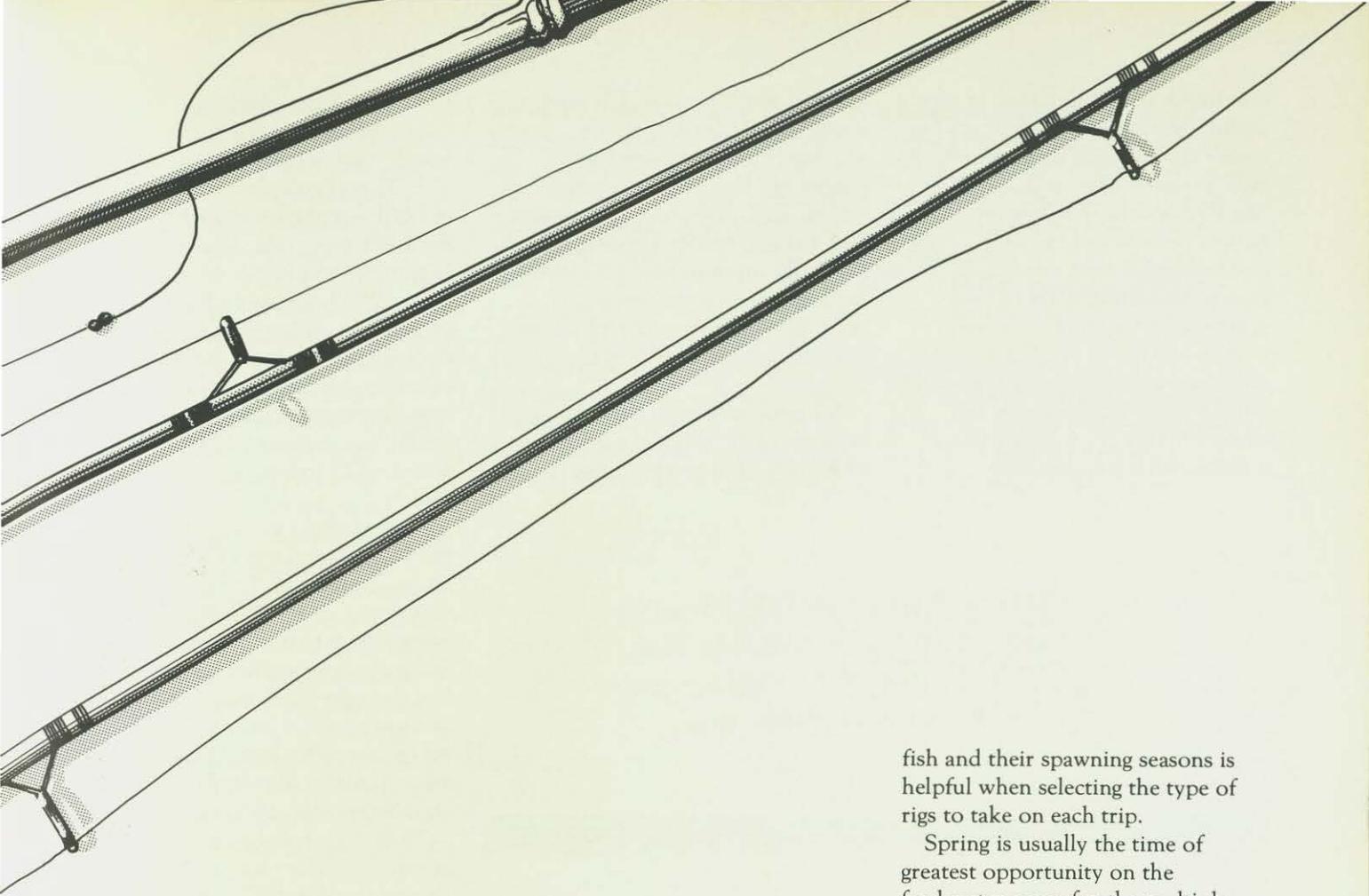
WHEN OPPORTUNITY STRIKES

BE EQUIPPED

By John M. Dean



If you are prepared
for several kinds of fishing,
you can catch more fish.



Florida fishing opportunities are extremely varied and offer many fine recreational opportunities. It's a shame not to take advantage of as many of them as possible. The best way to do this is to be prepared for several different styles of fishing on each trip you take. A classic example of how this type of preparedness can turn a ho-hum day into a great day occurred early one morning when my father and I were bass fishing along the southern edge of Polk County's Lake Marion. As we followed the shoreline around the southeast corner and turned

northward, the vegetation changed from thick bonnets to thin grass.

After 20 minutes or so of casting, my father noticed a patch of grass that was being shaken violently, as if fish were spawning below and causing the grass to "knock" with their bedding activity. We pulled in for a closer look and quickly determined it was an active shellcracker bed. We immediately took out our short bream poles, baited up with worms and before noon, had our limit of scrappy little redears. Because of the possibility of just such an opportunity, we had packed cane poles and bait worms along with our rods, reels and artificial lures. We were prepared, and as a result, enjoyed some terrific panfish action.

This is only one example of the times when other anglers and I have been able to catch fish because we were rigged and ready for more than one method of fishing. Naturally, some knowledge of various kinds of

fish and their spawning seasons is helpful when selecting the type of rigs to take on each trip.

Spring is usually the time of greatest opportunity on the freshwater scene for the multiple-species angler. When I go after bass during this time of year, I always take along an ultralight spinning outfit, spooled with 4-pound-test mono plus a good selection of small spinners and jigs. These are my choices for any bedding specs (crappie) or bluegills that might be available, should bass prove to be slow.

For most freshwater fishing, three basic rigs do the job for me: the standard baitcasting rod and reel ("bass rig") spooled with 17- to 25-pound-test line (for fishing heavy cover with plastic worms), spinner baits and crank baits; an ultralight spinning rig; and a fly rod. I sometimes carry a medium-action spin-casting rig with 8- to 12-pound-test line for those in-between lure weights, and because it's just plain fun to use a push-button reel. Most of the more recent models are well made and efficient.

Including the fly rod as a basic rig is a personal choice, but I have found it has more applications than just bugging the surface for panfish and small bass. Many serious bass anglers overlook the fact that deer- ▷

hair bass bugs can be fished in very shallow water without creating a big splash and alarming larger spawning bass. Properly presented, the bug hits the water in an extremely natural manner and can be manipulated in such a way as to have a devastating effect on really good-sized bass. Another often overlooked fact is that the fly rod is an effective subsurface rig, especially when fishing *slowly* a couple feet under the surface. A slow sinking streamer on a weight-forward

rod/reel combinations. The color sensitivity of bass is generally accepted, but few anglers realize bluegill can also be very selective feeders, and show color preferences. This was graphically demonstrated to me one morning when my friend, Bill Linn, and I found bream bedding in approximately 10 feet of water next to a steep dropoff.

Bill, originally from Georgia, had been telling me about the terrific white bass fishing in his home state

and proceeded to catch fish.

I searched my tackle box and found I had practically every color of 1/32-oz. Beetle Spin except the one Bill was using, so I tied a yellow and black one to the 4-pound-test line. In the next half hour, Bill landed 21 bluegill and I boated exactly one. Although we were using the exact same type of outfits, fishing at exactly the same depth and even throwing into the exact same "holes" on the water, I had been outfished 21 to one because of lure color!

After catching a couple more fish, Bill began to feel sorry for me, so he let me use his lure. The result of this change was amazing. Doing everything the same as before except for changing to a different colored lure, I caught 20 bluegill in almost as many minutes. Before Bill offered me the use of his lure, I had tried several other colors of that same-sized Beetle Spin, all to no avail.

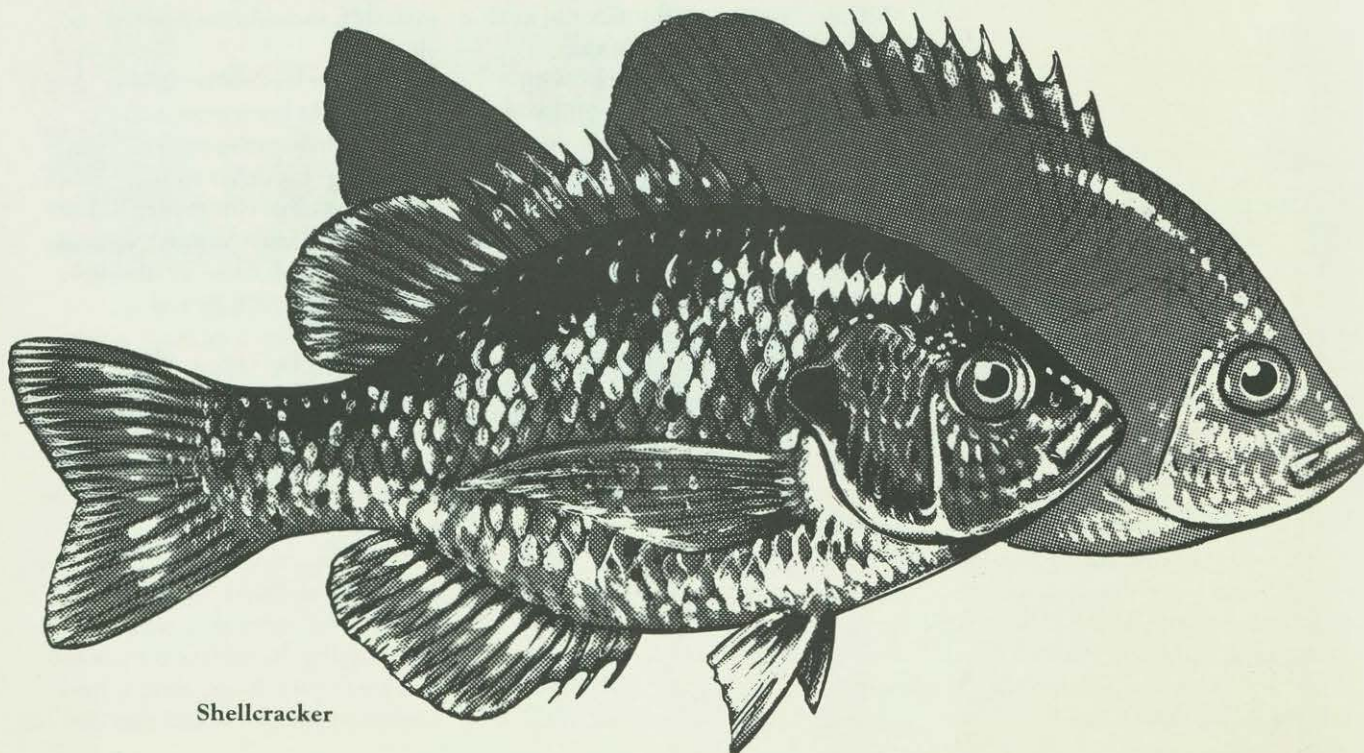
Those fish in that particular lake at that particular time were sure choosy about the color of the lure they would take. Of course, a lot had to do with the color of the water, and the food source common to the lake, but this incident vividly illustrates the need for carrying an assortment of lures in various colors

**After picking a different
color of lure, he caught
20 bluegills in almost
as many minutes.**

floating line is my favorite combination for slow, subsurface bassing.

Maintaining a wide selection of lure sizes and colors is just as important as choosing the proper

and how he and his buddies had "really slayed 'um" using ultralight spinning gear and a 1/32-oz. Beetle Spin Catawba Worm. As soon as we found the bedding bluegills, Bill tied on his Catawba Worm spinner



Shellcracker

and sizes. Needless to say, on the way home, I stopped by my favorite tackle shop and bought a half-dozen of those little spinners with the orange and black "Catawba" grubs.

Heading for freshwater with several different rigs can add greatly to your fishing enjoyment and to your catch, but it's in salt water that multiple rigs are a must. Salt water can present so many different possibilities that the ability to switch from a bottom-fishing rig to a lightweight spinning rod in an instant can mean the difference between a full ice chest or no fish at all. This is often the case when fishing offshore as well as inshore.

Last spring I was spending several days in the Destin-Ft. Walton Beach area and stopped to fish at the big Okaloosa County pier, situated just west of Destin. Contrary to what some boating anglers believe, pier fishing is not all "bottom dredging." In fact, action on the better piers can get frantic when the mackerel or blues are running.

The Okaloosa pier was experiencing a run of bluefish the week I was there. Nearly every angler on the pier had at least two outfits and some had three or four. Invariably, a bottom rig was weighted heavily and baited with

squid or cigar minnows and a lightweight casting or spinning rod was equipped with white jigs or silver spoons. This combination of multiple rigs proved to be perfect that day.

There are many inshore areas that provide excellent multiple-rig fishing, but one of my favorite places is along the southeast side of Tampa Bay, from the mouth of Little Manatee River south to Piney Point. This area is tailor-made for

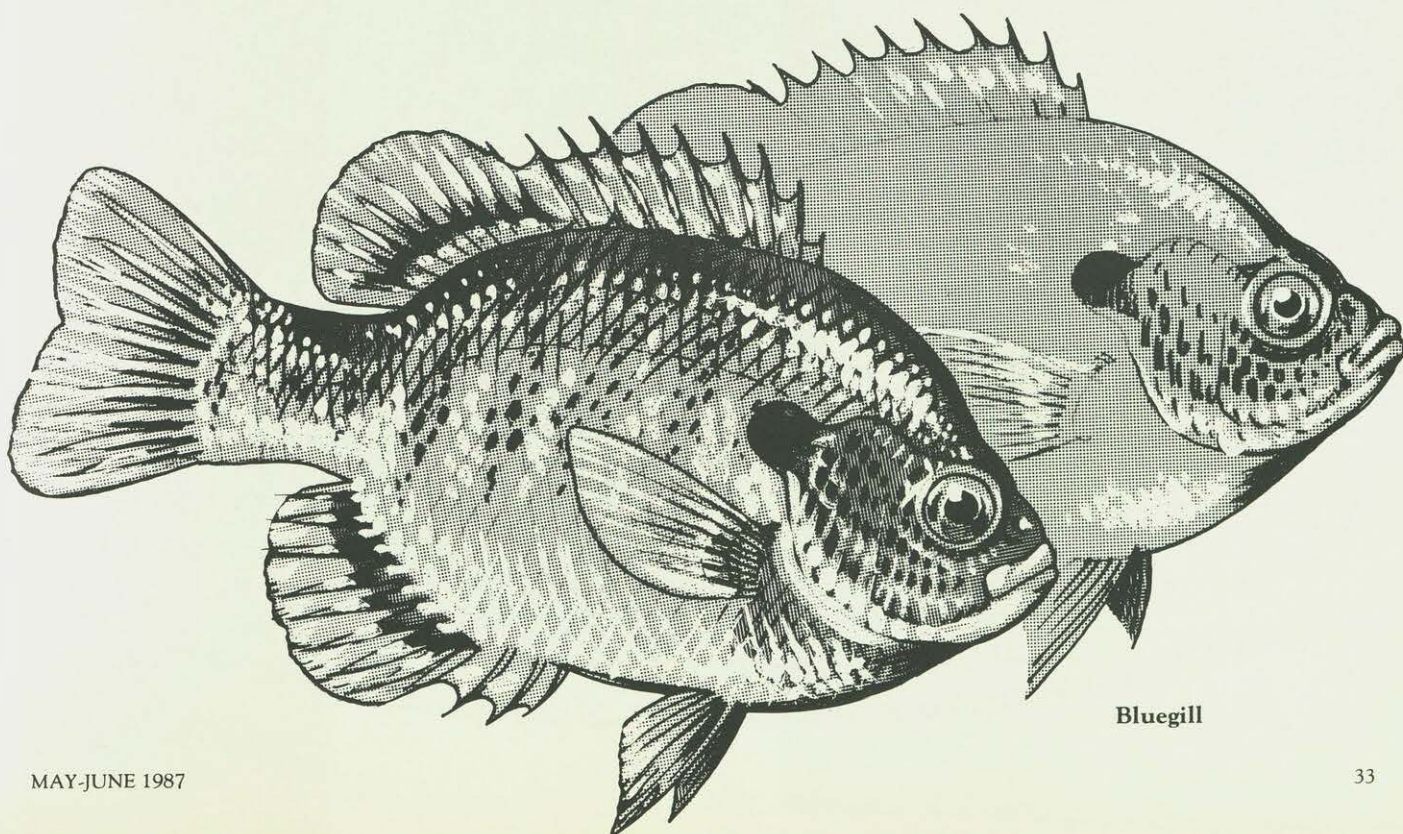
bass, flounder, grouper and even cobia can be caught in the deeper water, while the shallow flats hold speckled trout, silver trout, redfish and occasionally snook close to the mangroves.

It pays to be prepared for any opportunity. As busy as most of us are these days, it just doesn't make sense to spend time and money to go on even a one-day trip and not be ready to catch whatever fish turn out to be most readily available. Maintaining several carefully

When bass aren't biting, you can't fish for bedding bluegills unless you brought both the proper gear, and the right lure or bait.

bottom fishing on an outgoing tide and shallow-water flats fishing on an incoming tide. These waters almost always produce something, and if one method fails, you can easily try another. Sheepshead, spotted sea

selected rod/reel combinations and a well-stocked tackle box can add tremendously to your outings on fresh water or salt water and create many pleasant memories and fish stories for the future. ⑦



Bluegill



An Indian Legend of The Kissimmee River



ong ago in south Florida, two Indian brothers were hunting game for the family pot, but on that day, they had very little success. Shortly after they returned to their hunting camp, they were chopping wood for the fire, when suddenly, water gushed out of one of the logs and a fish came out with the water.

The older brother suspected that the fish was bad because it was in an unnatural place, but the younger brother ate it anyway to satisfy his hunger. During the following night, the younger brother, who had eaten the fish, began to suffer a terrible itching on his legs.

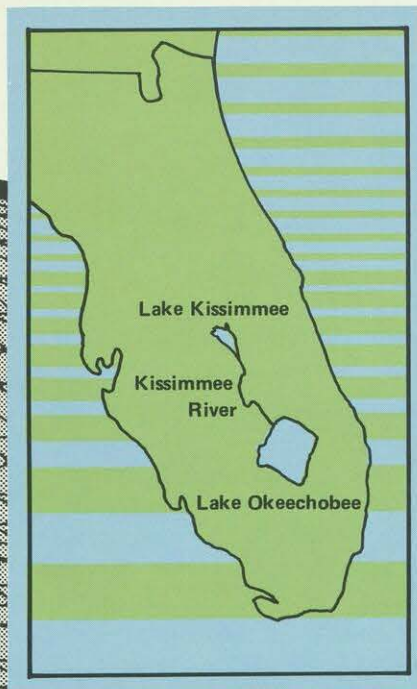
The next morning, the younger brother found that snake scales were growing down and around his legs, and he was also consumed by an unnatural craving for fish and frogs.

Realizing that his younger brother was being transformed into a snake, the older brother rushed to their family for help. The family then took the man-snake to Lake Kissimmee and released him there. He continued to live there a short time until he had consumed all the fish in the lake and had grown to become a huge water snake. The family then took cows and pigs to him to feed his unending hunger, but in his madness one day, he ate a family member as well.

His grandfather, in his love and fear for him, ordered the man-snake to go away and live in the south, which was at a place called *Big Water*, which had a never-ending supply of fish. The man-snake's mother, at their final goodbye, held his great horned head in her lap as the other family members hid in fear behind a tree.

As the man-snake slithered south to Lake Okeechobee, today's name for Big Water, his heavy tail formed the twisting bed of the original Kissimmee River.

—Submitted by Pat LaBree



Delicate Balance



"stinking cedar" because of its fragrant sap. It once was cut for fence posts because the wood is long-lasting in contact with the soil. Its slow-growing, close-grained, clear wood also was used to make tool handles and turned items.

During the late 1950s, a blight began to infect the Florida torreya and, by the 1960s, most of the population had been decimated. One or more common fungi are thought to be the infectious agents. The blight causes the torreya's stems and flat, needle-like leaves to shrivel and die. Although root systems of some trees initially survive and grow fresh sprouts, the roots of most trees die in short time.

The healthiest currently living specimens, many of which were transplanted to locations away from the Apalachicola River bluffs, are those which were planted in hardwood hammock habitats having sufficient soil moisture. However, all the known trees—even those planted in other states—have been afflicted by the blight. Seedlings grown from seed in areas hoped to be free of the blight also have shown symptoms. The exact mechanism of the infection is not fully known or understood, so treatment has been unsuccessful.

Fortunately, the species now seems to be naturally recovering from the blight, but most of the remaining trees are small and still too young to bear their plum-like, single-seeded fruits. The future of this unique species depends much on continued strict conservation of the last remaining trees, and probably most importantly, the species' natural ability to survive the blight.

— John Waters Jr.

Species: Florida torreya (*Torreya taxifolia*)

Florida and Federal Status: Endangered

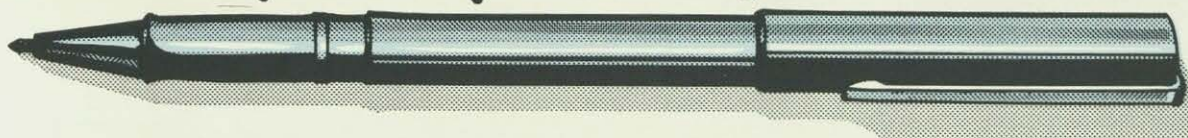
The Florida torreya is one of the rarest and most endangered trees found in North America. Only three related species are known to occur in the world: one each in California, China and Japan. Although related to the yews, the torreya more closely resembles deciduous hardwoods in its growth habits.

It grows naturally only on steep limestone-imbedded bluffs along a short length of the Apalachicola River. Some of these bluffs rise

more than 150 feet above the river. Most of the estimated 2,000 remaining trees are growing in that area at Torreya State Park in Liberty County. The Florida torreya formerly grew along those same river bluffs from where the park is today, upriver into a small area of Georgia; however, after the Jim Woodruff Dam was built across the Apalachicola, forming Lake Seminole, most of the Georgia trees were drowned.

The torreya is also known as

Help us please you more!



FLORIDA WILDLIFE Reader Survey

H

elp us learn more about you and what you want to read and see in FLORIDA WILDLIFE by answering our reader questionnaire. A postage-paid business reply mailer is provided for your convenience. Please mail your responses to us no later than August 1, 1987.

After we have received and analyzed responses, we will share our findings with you in a future issue. Thank you for helping us bring you the best in FLORIDA WILDLIFE!

1. How many years has your household received FLORIDA WILDLIFE? _____

2. Counting yourself, how many household members read or look through the magazine? _____

3. Where did you first become familiar with FLORIDA WILDLIFE? (Please check one.)

- ☐ friend or relative
- ☐ received gift subscription
- ☐ invitation in another Commission publication
- ☐ saw a copy in an office or lobby
- ☐ other (please specify): _____

4. Within the past two years, have you or members of your household participated in any of the following activities? (Check all that apply):

- ☐ enjoyed wildlife at home
- ☐ went afield to observe wildlife
- ☐ photographed wildlife
- ☐ boated or canoed
- ☐ fished
- ☐ camped
- ☐ hunted
- ☐ hiked

5. Please check how important each of the following is to your enjoyment of a magazine article:

	Very Important	Somewhat Important	Not Important
photographs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
drawings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fact and figures (statistics)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
writer's name and reputation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
maps and charts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please cut along dotted line.

6. Do you most consider FLORIDA WILDLIFE a (check one):

- ☐ conservation magazine
☐ wildlife magazine
☐ hunting and fishing magazine
☐ government publication
☐ other (specify) _____

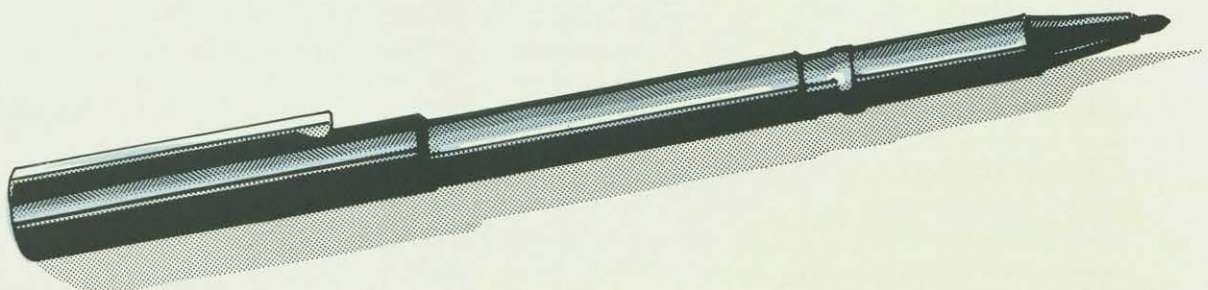
7. My overall impression of FLORIDA WILDLIFE magazine is (check one):

- ☐ excellent ☐ very good ☐ good ☐ fair ☐ poor

8. Would you like more or less of the following topics, or do you feel the magazine currently covers the topics sufficiently?

	More	Less	Same
Fish and fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fisheries management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boating and canoeing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Game hunting in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Archery and bow hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunter education and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife management areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guns and dogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Game animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Game birds and waterfowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threatened and endangered species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nongame birds and other nongame animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nature photography and nature photographs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife art and wildlife artists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Viewing and watching wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wild plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insects and other small life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Features for children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How-to articles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping and hiking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conservation issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Highlights of Florida's natural areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish and wildlife law enforcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CIRCULATION: *How are we doing?*

	Always	Sometimes	Never
9. My FLORIDA WILDLIFE issues are received (six bimonthly issues per year).	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []
Phone calls to the circulation office are returned promptly.	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []
Letter inquiries are responded to promptly.	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []
Duplicate issues arrive.	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []
I receive renewal notices on time.	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []
Gift subscriptions are handled promptly and efficiently.	<input type="checkbox"/> []	<input type="checkbox"/> []	<input type="checkbox"/> []

Any additional
comments? _____

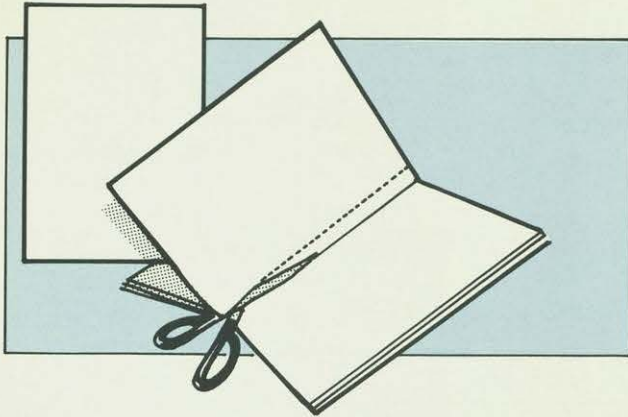
10. *Please tell us about yourself.*

- (1) Sex: ☐ [] female ☐ [] male
- (2) In what year were you born? _____
- (3) Are you a Florida resident? ☐ [] yes ☐ [] no
If so, for how long? _____
- (4) Do you consider your place of residence to be in a:
☐ [] big city or urban area
☐ [] small city or town ☐ [] rural area
- (5) Are you a licensed hunter? ☐ [] yes ☐ [] no
- (6) Are you a licensed angler? ☐ [] yes ☐ [] no
- (7) What is the highest level of education you have completed?
☐ [] 0-11 years
☐ [] completed high school
☐ [] some college
☐ [] completed college
☐ [] graduate/professional degree
- (8) What is your annual gross income:
☐ [] \$10,000 or less
☐ [] \$10,000 to \$15,000
☐ [] \$15,001 to \$20,000
☐ [] \$20,001 to \$30,000
☐ [] \$30,001 to \$40,000
☐ [] \$40,001 to \$50,000
☐ [] more \$50,000

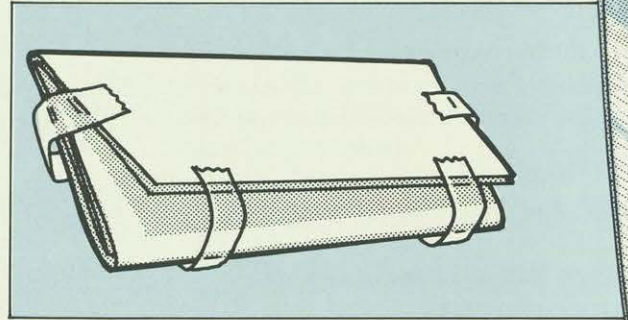
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Thank you!

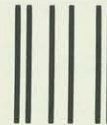
We appreciate you taking the time to complete and return the questionnaire.



Please carefully cut out the questionnaire pages, leaving an even edge along the dotted line of each sheet.



Next, carefully fold the two sheets together, with the Business Reply Mail section outside. Please close the folded sheets with small lengths of tape, using at least one on each side and two at the bottom.



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The Benefits of Deer Management

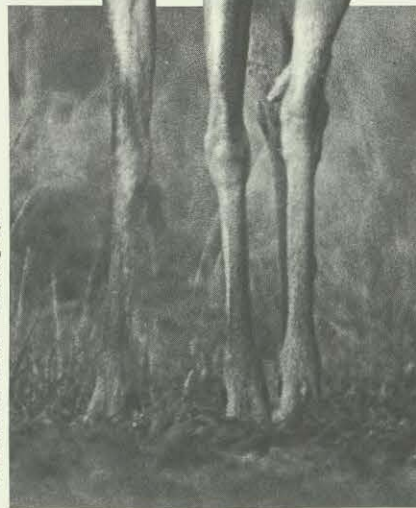
How EK Ranch Improved Its Deer Herd

By Henry Cabbage

Something was seriously wrong with the white-tailed deer herd at EK Ranch in eastern Lake County back in 1978. Hunger and abomasal parasites were taking a heavy toll of the animals and the bucks that were taken were young and had small antlers.

Key Scales III, president of the 11,000-acre ranch's hunt club, contacted Commission wildlife biologist Carlton Chappell to try and diagnose the problem. The Commission offers free assistance to Florida property owners and hunt clubs who suspect problems with their game populations, and Chappell is one of the Commission's top white-tailed deer experts.

"You simply have too many deer," Chappell told Scales after touring the ranch. "You have too many deer competing for a limited amount of food, and too many of the deer are does."



William A. Greer - Photograph

Chappell found, on one section of the ranch, that the herd's population was one deer for every 10 to 15 acres, and other sections were nearly as crowded. There was not enough food available for all the deer. Besides that, the deer had consumed so much of the high-quality food

supply, that bucks were not getting enough nourishment from the remaining vegetation to grow full-sized antlers.

Due to a long past history of *bucks only* hunting, the EK Ranch herd consisted of many more does than bucks. The solution was to reduce the herd by taking does.

At first, the idea of taking does did not appeal to the hunters, even with Scales' encouragement, EK Ranch Hunt Club members listened and tried to understand the need to reduce the doe population, but when it came time to hunt, they couldn't bring themselves to take does. It just didn't seem right to them.

Meanwhile, Chappell was busy examining the animals. He found the EK Ranch herd was suffering from enormous numbers of parasites as a result of poor nutrition and the general stress of overpopulation. One animal, a seven-year-old doe, ▸



With fewer deer competing for the available food, plus a supplemental feeding program, EK Ranch's herd was improved.

had an estimated 28,000 abomasal worms.

"I was very surprised she was still alive," Chappell said after his examination.

To emphasize the fact that the herd was unhealthy and the population desperately needed thinning, Chappell met with club members. He showed them the internal condition of one deer that had been taken for study and the condition of others taken by club members.

"As soon as they saw the heavy parasite burden the animals were carrying, the members became believers," Chappell said. "Many of them went right out and started taking does."

Some of the hunters at the EK Ranch still disagreed with the

decision to take does but, generally, club members cooperated in a spirit of willingness to try anything to improve the herd. Besides removing a prescribed number of does from the herd, they reluctantly agreed to limit buck hunting to older animals in order to allow younger bucks enough time to develop larger antlers. Members agreed not to take young bucks—even those with reasonably good-sized antlers. This measure allows a larger percentage of bucks to reach an age when they naturally begin to produce their largest antlers.

The herd improved gradually during the the next two hunting seasons. With fewer deer competing for the available berries, acorns, herbaceous plants, flowers and mushrooms that fed them, the

herd's health began to improve substantially. Since fewer individuals were competing for food, malnutrition problems were reduced and bucks' antlers showed marked improvement because of better nourishment and more bucks reaching the older age classes.

Scales said he noticed that the deer were undergoing rutting stages that seemed briefer and more intense than he had seen previously. Also, he noticed fewer late-born fawns than in the past, which generated a higher survival rate for fawns. In turn, that resulted in better hunting.

"We doubled our annual deer harvest," Scales said. "We went from 50 deer per year to 100 per year, including 50 does, by the 1981-82 season."

By then, Scales had become fascinated by the concept of deer management. He began keeping data on each deer taken on the ranch. The size, weight, antler development and location of each kill was recorded on cards and later inputted into a computer for analysis. Scales began reading more about deer management and biology, and he started attending technical workshops to keep track of the latest information in the fields of deer genetics and nutrition.

"I found out there is a lot of genetic variability in white-tailed deer," Scales said, "and I discovered that age is a very important factor in antler development. Spike formation is linked to nutrition. Fawns are seriously affected by poor nutrition and, once stunted, they tend to remain stunted throughout life."

Biologists say they are not convinced that a pregnant doe's nutrition will hamper her buck fawn's antler development after its birth, but all agree that each individual animal must have an adequate diet if it is to develop quality antlers.

Scales noticed that healthy, well-nourished, two-year-old bucks generally have six- to eight-point antlers, and three-year-olds usually have eight points or better.

"We get the best antlers on four-

to seven-year-olds," Scales said. "We don't try to manage this herd to produce trophy bucks, but we do try to manage it to furnish high quality hunting."

It's working. During the 1985-86 hunting season, EK Ranch's deer herd produced some of the best antlers in Florida. Part of that was due to a supplemental feeding program the hunt club launched during 1985. The club established 16 stations where the deer could feed on prepared feed which had a 20-percent protein additive.

Scales said that thinning the herd served to make more natural food available to the remaining animals, but he said the supplemental feeding accomplished the more important task of improving the quality of nutrition.

"A buck fawn needs 18 percent protein in its diet," Scales said. "That's just not naturally available in areas where the soil is poor."

Chappell said Florida white-tailed deer are generally smaller than white-tailed deer in Northern states, but he said proper management could produce larger bucks in Florida.

"I know of one 300-pound white-tail taken in Florida a few years ago," Chappell said, "We can harvest more large deer if we make sure plenty of quality, natural food is available and allow most of the bucks to reach at least 3½ years of age."

The problem is that it is hard to convince some hunters of the value of proper deer management.

"It's not that hard to explain how it works and why it works," Chappell said, "but it's difficult to get hunters to shoot does when all their lives they've believed that you preserve a herd by not shooting does."

On the other hand, hunting does isn't always the answer.

"You have to consider the individual area," Chappell explained. "You can't say what's best for one area is also best for another area. You don't want to take does when the population is low, and when you want to build a herd quickly, you don't want to

harvest any deer."

Chappell said problems with deer herd health in Florida over the past decade, in most cases, reflect overpopulation, like the case at EK Ranch.


"When that happens," he said, "solutions are available, and the Commission is pleased to help find them."

"All it takes is a telephone call to me, or to one of the Commission's regional offices, and we'll send a wildlife biologist to determine the cause of the problem and recommend the best course of action," Chappell said. "Florida can produce some fine deer. It just takes management and hunters who are willing to try some things they aren't used to."

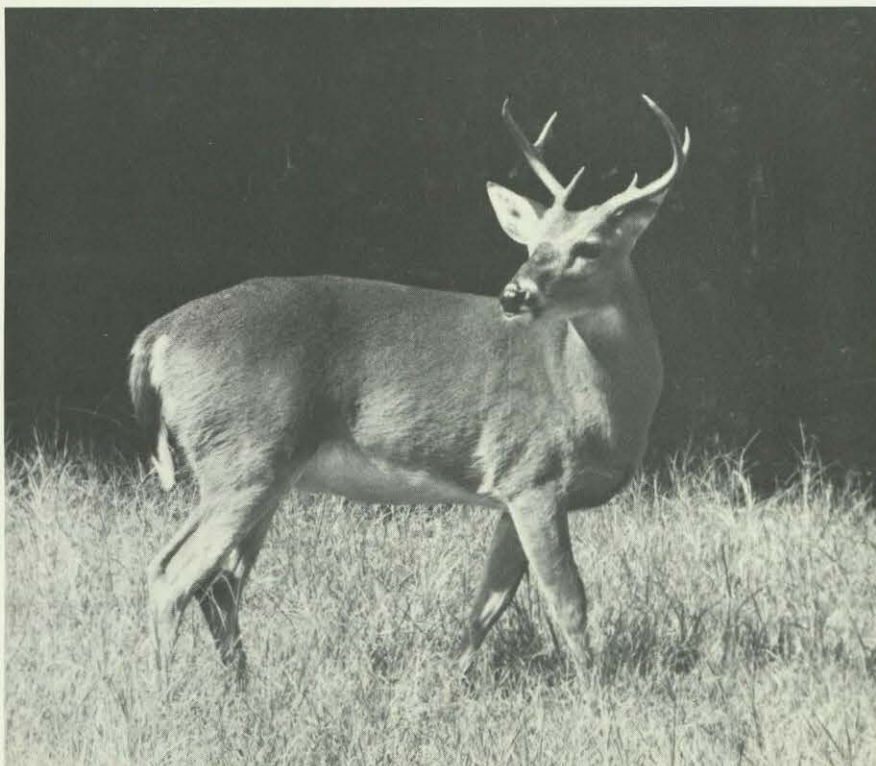
Scales said, "It's worth the effort. Just knowing there are some great deer out there now adds a whole new dimension to our hunting."

EK Ranch hunters plan to keep using modern techniques to manage their herd.

"We are seeing more fawns and larger fawns this year than ever before, and we believe this is connected to our supplemental feeding program," Scales said, "and we expect to see larger adult deer on the ranch pretty soon because of the improved nutrition for the herd."

"That could very well happen," Chappell said. "Once you get serious about managing a deer herd and stick with a prescribed management and harvesting plan, the results can be very rewarding." 

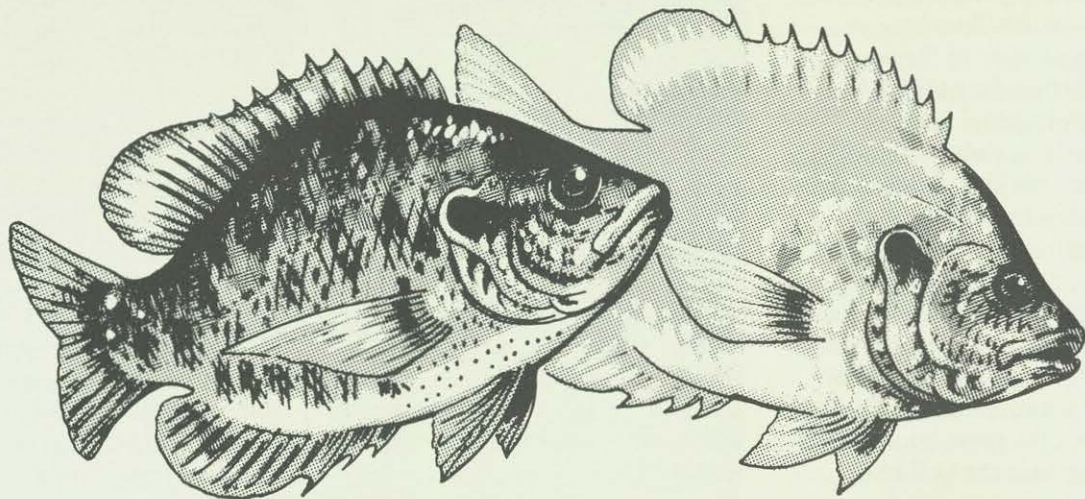
**"Florida can produce some fine deer.
It just takes management and hunters
who are willing to try some
things they aren't used to."**



Jake Johnson-Photograph

It's The Law

By Major Kyle W. Hill



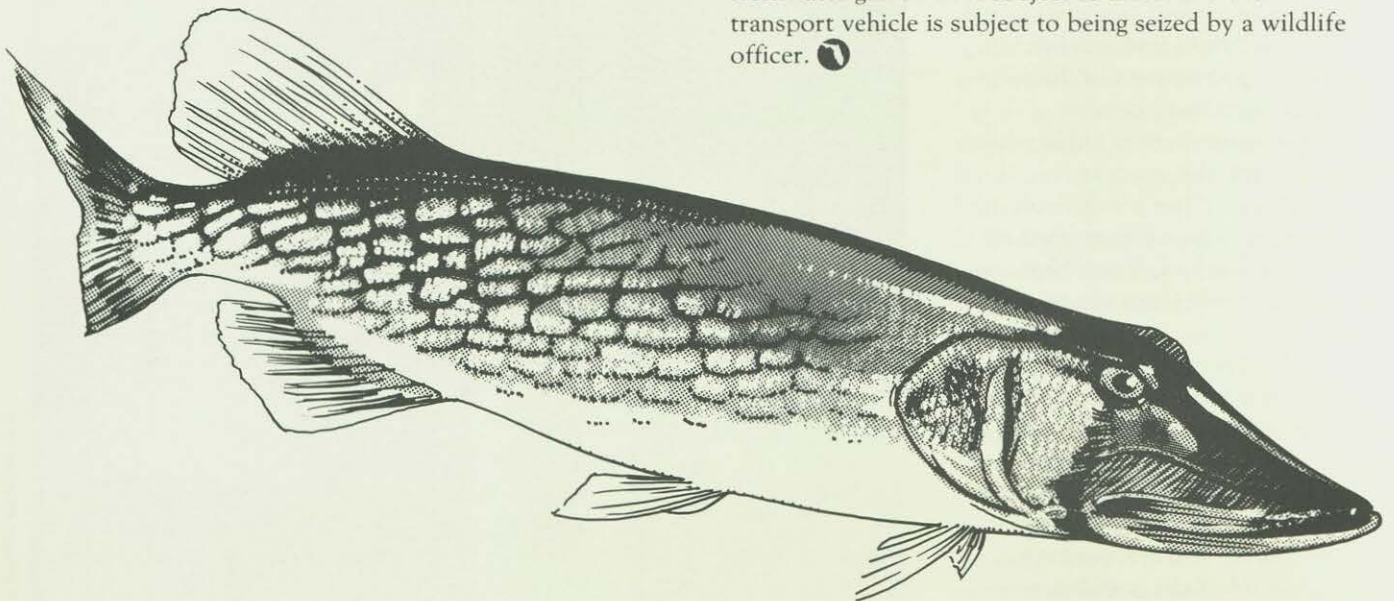
Can I use bream or pickerel to bait my hooks to fish for bass?

If you are the person who catches the pickerel or bream to be used for bait, you may use them when fishing with either rod and reel or pole and line. Neither bream nor pickerel may be used as bait on trotlines, bush hooks or other devices. It is unlawful to use bass, goldfish or carp as bait.

If I go to Lake Okeechobee or some other Florida body of fresh water and fish for a week, how many crappie (speckled perch) can I carry home?

Commission freshwater fishing regulations allow a person to take up to 50 panfish a day; however, no person is allowed to have more than two days' bag limit of freshwater fish in his possession. Bag limits do not apply to fish kept in your home freezer.

It is also against the law to transport "commercial quantities" of freshwater game fish. A "commercial quantity" is defined as 150 pounds or more. Any person who transports 150 or more pounds of freshwater game fish is subject to arrest and the transport vehicle is subject to being seized by a wildlife officer. ⑦



Hunter Education News

By Lieutenant Byron Stalvey
Hunter Education Officer



A responsibility shared by all hunters is to correctly identify their targets before shooting. This can be especially important for waterfowl hunters since bag limit points are determined by the species taken. Learning to correctly identify waterfowl can take years of practice; however, there are a few "rules of thumb" that can help the novice.

Several characteristics can be used to help identify a waterfowl species. Among these are the habitat in which it is found, behaviors, colors, body shape and vocalizations.

"Puddle ducks" are usually found in shallow marshes and river edges rather than large lakes and bays. They commonly feed by "dabbling" or dunking their heads in the water. They ride high on the water and fly upward when taking off in flight. The colored wing patch, called the *speculum*, is generally iridescent and bright. Ducks found feeding on cropland will most likely be puddle ducks because this group also can walk well and even run on land. Their diet is primarily vegetable matter.

"Diving ducks" frequent larger, deeper lakes and rivers. They feed by diving, often to considerable depths. They also can swim a considerable distance under water to escape danger. The wing patches of diving ducks lack the iridescence of those found on puddle ducks. To compensate for their shorter tails, they use their large paddle-shaped feet as "rudders" when flying. Their feet are often visible in flight.

When taking off, most diving ducks "run or patter" along the water surface before becoming airborne. Since their wings are small in proportion to their body size, they have a rapid wingbeat compared to puddle ducks. Diving ducks chiefly feed on fish, shellfish and aquatic plants.

Each waterfowl species usually has specialized habitat requirements. Being familiar with these can aid you in properly identifying different species. Some species, such as mallards and other dabbling ducks, prefer shallow marshes and small ponds. Others, such as the canvasback, prefer deeper water bodies.

The wingbeat and flocking behavior of waterfowl can also be useful keys for identification. In flight, flocks of mallards and pintails form long lines and they have a slow wingbeat. This is typical of pond or dabbling ducks. Diving ducks such as the canvasback fly in shifting, waving lines and have a fast wingbeat.

A bird's colors and body shape can also be useful characters for identification. Body silhouettes vary, for example, showing large or small heads, broad or narrow bills, fat or slender bodies and long or short tails. Colors are best seen at close range, but depending on light conditions, birds may not appear in their true colors. Nevertheless, color patterns can be a key to their identity.

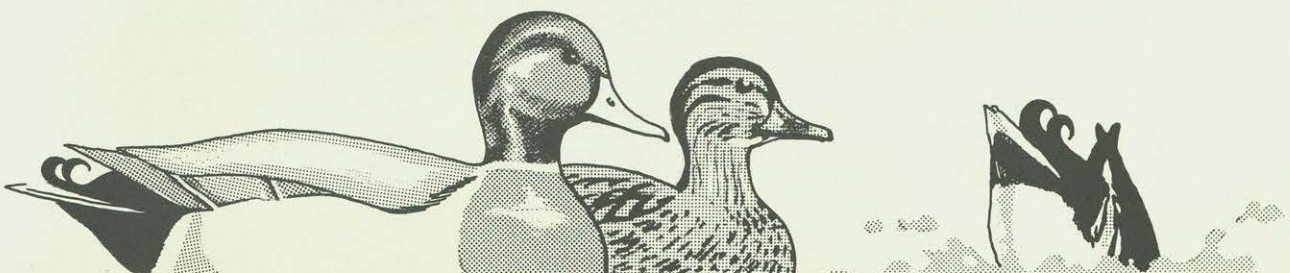
The sound of the birds' voices or the noise made by their wings when in flight may also be used to help identify them. Remember that not all ducks *quack*—many *whistle* or *squeal*. Wings of the goldeneye whistle in flight, while those of most other ducks do not.

Most ducks shed their body feathers twice each year. Nearly all adult drakes lose their brightly colored plumage after mating and, for a few weeks, resemble females in coloration. This hen-like appearance is called the *eclipse plumage*. The time required to return to breeding coloration varies among species. Some species retain eclipse plumage into the winter.

Wing feathers are only molted once each year. Wing feather colors are always the same and are the most reliable feature for identifying a duck at close range.

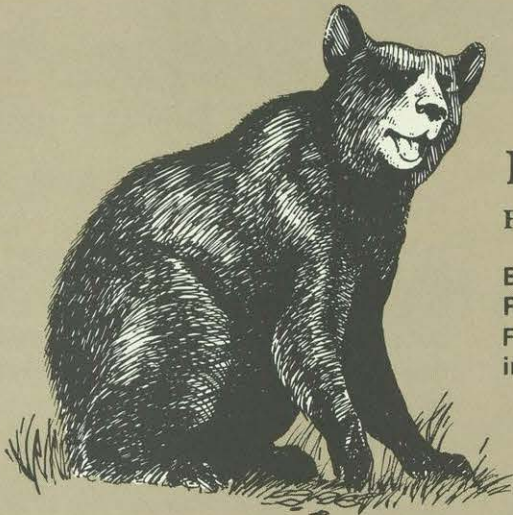
Plumage of juvenile ducks early in the fall is very similar to that of the adult female. During the fall, juvenile males start to change to their first adult breeding plumage.

There are many publications available to help you become more proficient at identifying these fascinating birds. Learning to correctly identify waterfowl requires practice and dedication on the part of the hunter. One benefit, however, is that the time spent in field observations can be very rewarding and educational. 🦆



HELP PROTECT

TWO OF FLORIDA'S ENDANGERED AND THREATENED MAMMALS



Black Bear

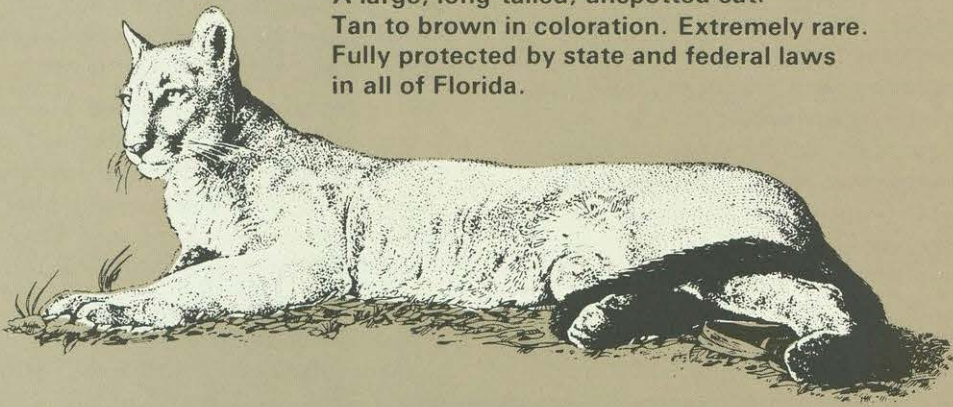
Florida Status: Threatened

Black or dark brown coloration.
Rare throughout most of Florida.
Fully protected by state law
in most of Florida.

Panther

Florida Status: Endangered

A large, long-tailed, unspotted cat.
Tan to brown in coloration. Extremely rare.
Fully protected by state and federal laws
in all of Florida.



**These Large Mammals Are a
Beneficial Part of Our Environment.**



FLORIDA GAME AND FRESH WATER FISH COMMISSION

By John Waters Jr.

Art Editor Says Goodbye

John Roberge, FLORIDA WILDLIFE's art editor since September 1983, has left the Game and Fresh Water Fish Commission. In his resignation letter, he said, "It has been both a privilege and an education to have worked on the publication of FLORIDA WILDLIFE..."

Roberge's mastery of magazine design and his talent for quality illustration have been key elements in FLORIDA WILDLIFE's recognition for general excellence. He and his works will be greatly missed.

Summertime is Learning Time

With the summer season here, and many schoolchildren out of classes for the season, it is a fine time for taking family field trips to learn more about nature. Day trips or campouts to our coasts, state parks, local parks and refuges can be enjoyable and educational to all ages. There are many opportunities throughout Florida for learning more about wild animals and plants and how they interact.

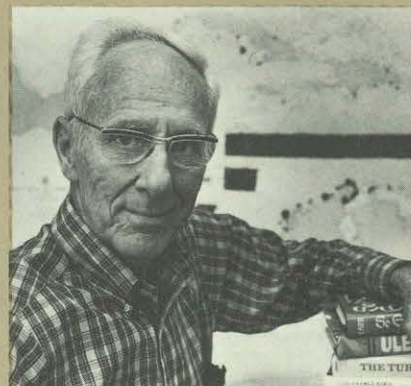
Taking along a camera, binoculars and a few inexpensive field guides can greatly enhance the learning experience. Photographs help recall the fun and sights of a day afield, and binoculars and field guides make observation and identification of species easier, as well as more certain.

Other things to include are sunscreen and insect repellent, and depending on the area to be visited, proper clothing and footwear. Bright sun, bugs, briars and other natural obstacles are also part of Florida's ecology.

Noted Zoologist Will Be Remembered

Dr. Archie Fairly Carr Jr. died of cancer May 21. He was University of Florida's longest-tenured professor, having been affiliated with UF for 55 years. During those years, he was recognized many times, by UF and others, for his outstanding contributions to zoology. He began his association with UF as a student, which in 1937, resulted in him being the university's first student to earn a doctorate in biology.

Dr. Carr wrote 11 books and more than 100 scientific papers and articles on sea turtles. Some of his books earned him international honors for their excellence in content, style and significance to conservation. "*The Windward Road*," his book about the plight of



Dr. Archie Fairly Carr Jr.

green sea turtles in the Caribbean Sea, is credited with being the major stimulus which led to the 1959 establishment of the non-profit Caribbean Conservation Corporation.

His findings as a sea turtle researcher also helped establish Tortuguero, a green sea turtle sanctuary along the coast of Costa Rica, the turtles' only significant egg laying area in the Caribbean. At the time of his death, Dr. Carr was helping establish the world's largest sea turtle center at UF.

Florida Folk Festival Was 35th Annual Event

The 1987 Florida Folk Festival celebrated 35 years of the annual event. Held at the Stephen Foster Memorial on the banks of the Suwannee River in White Springs, the annual program is sponsored by the Florida Department of State.

This year's festival featured Florida's maritime history, and provided visitors an opportunity to learn more about such activities as fish smoking, oyster tonging and shucking, boat building, net making, sponge diving and other aspects of our marine resources.

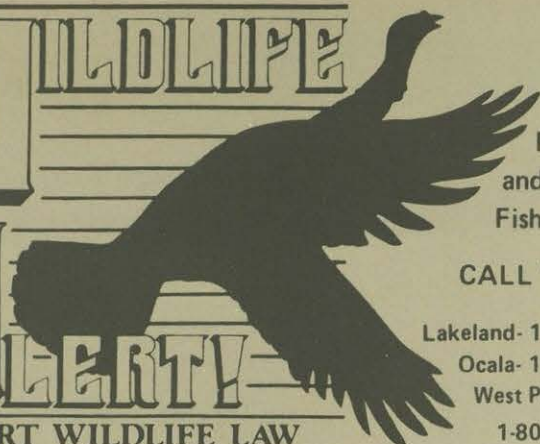
Folk music, stories and crafts demonstrations are regular features of the three-day festival. This year's participants included bluegrass, country and gospel musicians and singers; potters; sculptors; fabric

workers; weavers; woodworkers; metalworkers; folk dancers; story tellers and various other artists and craftspersons. The festival also featured ethnic foods, including traditional Florida dishes.

The Stephen Foster Memorial has extensive and well maintained grounds that have been landscaped to feature the site's native plant communities. These vary from centuries-old bald cypress and live oaks to annual wildflowers. On the banks of the famed Suwannee River, the open park atmosphere of the memorial grounds is an appealing place for all ages.

The memorial and the annual festival celebrate our wildlife heritage, our cultural diversity and life itself.

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This publication was produced at an annual cost of \$47,396, or \$1.66 per copy, to provide information to the public about wildlife resources and their conservation. Subscription revenues defray a substantial portion of the above-listed cost of magazine production.



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OR HUNTING TRIP, OR DAY AT THE BEACH —
PICK UP ALL PAPER,
BOTTLES AND
CANS —

TAKE ALL TRASH WITH
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IT IN YOUR
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APPLAUSE!



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